



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

EUGENE CONTI
SECRETARY

August 11, 2009

MEMORANDUM TO: Mr. J. Wally Bowman, PE
Division Five Engineer

FROM: Philip S. Harris, III, P.E., Unit Head
Natural Environment Unit
Project Development and Environmental Analysis Branch

A handwritten signature in black ink, appearing to read "E. L. Furr".

SUBJECT: Wake and Franklin Counties, US 401 from SR 2044 (Ligon Mill Road) to SR 1700 (Fox Park Road); T.I.P. Number R-2814; Federal Aid Project No. STP-401(4); State Project 8.1403001

Attached are the U.S. Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Quality Section 401 Individual Water Quality Certification, Riparian Buffer Authorization and Section 401 Isolate Wetlands Permit for the above referenced project. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<http://www.ncdot.gov/doh/preconstruct/pe/neu/permit.html>

PSH/gyb

Attachment

Cc: W/attachment
Mr. Randy Garris, P.E. State Contract Officer
Mr. Chris Murray, Division Environmental Officer
Ms. Beth Harmon, EEP

Cc: W/o attachment (see website for attachments)
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Art McMillan, P.E., Highway Design
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Mr. Eric Midkiff, P.E., PDEA Central Region Unit Head

PROJECT COMMITMENTS

US 401 from SR 2044 (Ligon Mill Road) to
SR 1700 (Fox Park Road)
Wake and Franklin Counties
Federal-Aid Project STP-401(4)
State Project 8.1403001
WBS Element 34506.1.1
TIP Project R-2814

Current status, changes or additions to the project commitments as shown in the environmental document for the project are printed in *italics*.

Commitments Developed Through Project Development and Design

PD&EA-Human Environment Unit/Air And Noise Section

Along the bypass portion of the proposed project, new building permits are being issued almost weekly and development is steadily occurring. Noise impacts will be reevaluated during the preparation of the final design plans to determine which homes would be eligible based on the date of public knowledge.

Noise impacts were reevaluated in August 2008 to determine which homes would be eligible for noise abatement based on the date of public knowledge. It was determined from the date of public knowledge and the remaining receptors that the final traffic noise analysis showed no impacts. Therefore no noise abatement is recommended.

Hydraulics Unit

The Hydraulics Unit in conjunction with the Project Development and Environmental Analysis Branch will coordinate with the Army Corps of Engineers and the North Carolina Wildlife Resources Commission during final hydraulic design to facilitate the permitting process and to ensure that all environmental concerns are appropriately addressed.

The Hydraulics Unit has coordinated with the Army Corps of Engineers and the North Carolina Wildlife Resources Commission during the final hydraulic design to ensure that all environmental concerns are appropriately addressed. A concurrence point 4B (Hydraulic Design Review) meeting was held on June 18, 2007 with both the USACE and NCWRC present. A concurrence point 4C (permit drawing review) meeting will be held prior to submitting the final permit drawings to allow further agency input.

Division 5 Construction/Roadside Environmental Unit

The mid-portion of the project, from SR 1003 in Wake County to SR 1100 in Franklin County, is located within a water supply watershed and a high quality water

zone. Due to the presence of high quality waters, sedimentation and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds

A noise wall is recommended for the proposed project. The preliminary design of an optimized concrete noise wall, recommends constructing a wall approximately 1245 feet long and with an exposed height of 13 feet starting at Station 10+43 (Y-10) Lowell Ridge Road and ends at Station 21+20(L Line).

Bridge Maintenance and Structure Design

For all drainage structures recommended to be retained, it is further recommended that a detailed assessment of structural integrity be obtained from the Bridge Maintenance and Structures Design Unit.

An eight by eight feet double box culvert will be retained for this project. The culvert was reviewed in the field prior to the decision to retain and it was noted that it was not perched and did not have any scour or slope problems. A more thorough assessment by bridge maintenance is still needed.

Human Environment Unit-Archeology Section

Archaeological surveys are currently being scheduled for the widening of US 401 to include the bypass of Rolesville. The State Historic Preservation Office has reviewed the scope of work proposed to complete the archeological surveys and agrees that the outlined scope of work will satisfy Section 106 coordination. See attached scope of work in the Appendix.

Natural Environmental Unit

Because of the presence of potentially suitable habitat and the presence of extant populations in the two counties for Michaux's sumac, surveys should be conducted along the widening portion every two years. This is a standard protocol and surveys will be conducted until permits are received for each section of the project

A survey for Michaux's sumac was conducted in September 2008. Michaux's sumac was not observed within the project footprint. As such, the biological conclusion of no effect is still valid.

Roadside Environmental Unit and Roadway Design

The National Registered Rogers-Whitaker-Haywood house is located along Section A. Construction of the proposed project will have no adverse effect on this property. This is contingent upon no right of way acquisition from the property by NCDOT, landscape protection measures along the property's right of way, and reasonable access to SR 2049 after construction of the proposed project.

No right of way will be acquired from the Rogers-Whitaker-Haywood House along Section A. Additional commitments regarding the Rogers-Whitaker-Haywood House will be addressed during construction.

The National Register-eligible Timberlake Historic District and the Perry Fuller House are located in Section D. There will be no adverse effect to these properties. The effect is contingent upon the commitment that NCDOT will not obtain any right of way from the property, landscape protection measures will be provide along the right of way and reasonable access will be provided after construction.

No right of way will be acquired from the Timberlake Historic District. Additional commitments regarding this property will be address during final design.

Commitments Developed Through Permitting

Natural Environment Unit

NCDOT shall provide compensatory mitigation for the unavoidable impacts to 0.75 acre of wooded wetlands, and 3.64 acres of non-wooded wetlands, associated with Sections A and B of TIP R-2814, by debiting 2.62 acres of riverine and 1.77 acres of non-riverine wetland restoration, and 3.75 acres of riverine wetland preservation, from the Jeffreys Warehouse Mitigation Site (aka JALO), described in the September 17, 2004 "Jeffreys Warehouse Conceptual Mitigation Plan, Wayne County, North Carolina".

This has been completed.

NCDOT shall provide compensatory mitigation for the unavoidable impacts to 3,141 linear feet of warm-water streams, associated with Sections A and B of TIP R-2814, as follows:

1. By debiting 3,141 linear feet of stream restoration from the Marks Creek, Phase II, Mitigation Site (AID 2008-02072), described in the September 2001 "Stream and Wetland Mitigation Plan, Marks Creek, Phase II, Wake County, North Carolina".
2. Compensatory mitigation shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated September 20, 2005 from William D. Gilmore, EEP Director; pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 3,141 linear feet of warm-water restoration equivalent stream mitigation, in the Upper Neuse River basin (Hydrologic Cataloging Unit 03020201) by one year of the date of this permit. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

This has been completed.

NCDOT shall provide compensatory mitigation for the unavoidable impacts to wetlands and streams, associated with Sections C and D of TIP R-2814, no later than 5 years in advance of the anticipated construction let date for each section. Specific mitigation information for each of these sections will be provided when NCDOT submits their request to modify the existing permit to allow construction of these later phases once final design has been completed, and the District Commander has made a determination that minimization of impacts has been achieved to the maximum extent practicable.

When final design plans are completed for R-2814 Section B, and any future sections, a modification to the 401 Water Quality Certification and the Neuse River Riparian Certification shall be submitted with five copies and fees to the NC Division of Water Quality. Final design shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters and buffers. No construction activities that impacts any wetlands, streams, surface waters, or buffers located in Section B, or any future sections shall begin until after the permittee applies for and receives a written modification of the 401 Water Quality Certification and the Neuse River Riparian Buffer Authorization from the NC Division of Water Quality.

Compensatory mitigation for impacts to Neuse Riparian Buffers is required. The mitigation requirements include 752,085 square feet of Zone 1 Buffers and 233,240 square feet of Zone 2 Buffers. We understand that you have chosen to debit mitigation from the Wiggins Mill Mitigation Site in order to satisfy the wetland mitigation requirements of R-2814 A and B.

Hydraulics Unit and Division 5

For project sites impacting waters classified by the NC Environmental Management Commission as High Quality Waters (HQW), or Water Supply I or II (WSI, WSII), (i.e., Cedar Fork Creek, Perry Creek, and their tributaries in Section B), stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged.

Natural Environment Unit and Division 5 and Roadside Environmental Unit

NCDOT shall implement the nine conservation measures listed in NCDOT's December 5, 2005 Biological Assessment for this project, and shall reinitiate consultation with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act for Sections C and D when they are scheduled for construction. These conditions are attached.

Roadway Design Unit and Roadside Environmental Unit

NCDOT shall comply with its commitments regarding the following historic properties: Timberlake Historic District, Perry-Fuller House, Jeffreys-Ellington Farm, Rogers-Whitaker-Haywood House, and Cascine Plantation. Specifically, NCDOT shall not acquire any right-of-way or easements from these historic properties, and shall use landscaping measures along the properties' right-of-ways (with the exception of the Cascine Plantation), shall provide reasonable access to the property owners.

Roadside Environmental Unit

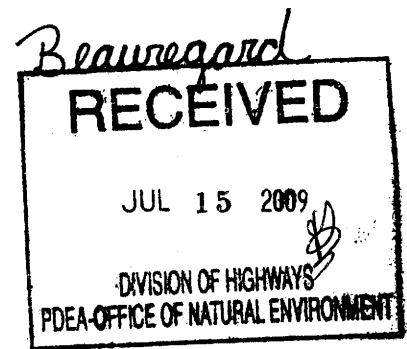
The permittee shall use Design Standards in Sensitive Watersheds [15A NCAC 4B.0124(a)-(e)] in areas draining to WS-II HQW waters (i.e., Cedar Fork Creek, Perry Creel and their tributaries in Section B). Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover shall be planted on all bare soil within 15 business days of ground disturbing activities to provide erosion control. Coir fiber matting shall be used in conjunction with appropriate seeding on disturbed soils involving steep slopes in riparian areas, and should be secured in place with staples and wherever possible include installation of live stakes of native trees.

Straw mulch and tall fescue shall not be used in the establishment of temporary or permanent groundcover within riparian zones. Coir fiber matting shall be used in conjunction with appropriate seeding for the establishment of permanent herbaceous cover on disturbed soils within the riparian area. Hydro seeding along with wood or cellulose based hydro mulch applied from a fertilizer and limestone free tank is allowable at the appropriate rate for the establishment of temporary groundcover within riparian zones. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343



July 14, 2009

Regulatory Division

Action ID SAW-2008-01316; TIP No. R-2814 (US 401 Widening and Rolesville Bypass)

Mr. Gregory Thorpe, PhD
Environmental Manager Director
Project Development and Environmental Analysis Branch
N.C. Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Thorpe:

Enclosed is a Department of the Army permit to authorize placement of fill material impacting 5,036 linear feet of streams, 10.08 acres of ponds, and 7.68 acres of wetlands (including isolated wetlands), for construction of the US 401 Widening and Rolesville Bypass (TIP R-2814), crossing Harris, Cedar Fork, Perry, Brandy, Crooked and Cedar Creeks, Wolfpen Branch, the Little River, and unnamed tributaries. An 18.5 mile corridor along and to the east of existing US 401, from SR 2044 (Ligon Mill Road) southeast of Rolesville, in Wake County, to SR 1700 (Fox Park Road) southeast of Louisburg, in Franklin County, North Carolina.

Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified.

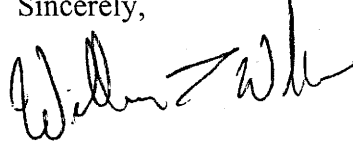
Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:


- a. You must complete construction before December 31, 2014.
- b. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

You must notify this office in advance as to when you intend to commence and complete work.

You should address all questions regarding this authorization to Eric Alsmeyer of my Raleigh Regulatory Field Office regulatory staff at (919) 554-4844, extension 23.

Sincerely,



 Jefferson M. Ryscavage
Colonel, U.S. Army
District Commander

Enclosures

Copy Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
ATTN: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, Maryland 20910-3282

Copies Furnished (with special conditions and plans):

Mr. Ronald J. Mikulak, Chief
Wetlands Regulatory Section
61 Forsyth Street
Atlanta, Georgia 30303

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler
National Marine Fisheries Service
Pivers Island
Beaufort, North Carolina 28516

Mr. Doug Huggett
Division of Coastal Management
N.C. Department of Environment
and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557

Mr. David Rackley
National Marine Fisheries Service
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

DEPARTMENT OF THE ARMY PERMIT

Permittee: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RECEIVED

Permit No: 200801316

JUL 09 2009

REGULATORY
WILM.FLD.OFC.

Issuing Office: USAED, WILMINGTON

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of the office acting under the authority of the commanding officer.

You are authorized to perform work in the accordance with the terms and conditions specified below.

Project Description: Place fill material impacting 5,036 linear feet of streams, 10.08 acres of ponds, and 7.68 acres of wetlands (including isolated wetlands), for construction of the US 401 Widening and Rolesville Bypass (TIP R-2814), crossing Harris, Cedar Fork, Perry, Brandy, Crooked and Cedar Creeks, Wolfpen Branch, the Little River, and unnamed tributaries.

Project Location: An 18.5 mile corridor along and to the east of existing US 401, from SR 2044 (Ligon Mill Road) southeast of Rolesville, in Wake County, to SR 1700 (Fox Park Road) southeast of Louisburg, in Franklin County, North Carolina.

Permit Conditions:

General Conditions:

1. The time Limit for completing the work authorized ends on December 31, 2014 If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Conditions 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site eligible for listing in the National Register of Historic Places.
4. If you sell the property associate with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

***SEE ATTACHED SPECIAL CONDITIONS**

Further Information:

1. **Congressional Authorities:** You have been authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. C. 403).

Section 404 of the clean Water Act (33 U.S.C. 1344).

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. **Limits of this authorization.**

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. **Limits of Federal Liability.** In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United states in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measure by contract or otherwise and bill you for the cost.

6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

E. L. Leuk for Gregory J. Thorpe, PhD June 30, 2009
(PERMITTEE) NORTH CAROLINA DEPARTMENT OF (DATE)
TRANSPORTATION

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

[Signature] 7/14/09
(DISTRICT Commander) JEFFERSON M. RYSCAVAGE, (DATE)
COLONEL, U. S. ARMY
DISTRICT COMMANDER

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(Transferee)

(DATE)

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

Work Limits

- a) All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
- b) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- c) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.

Related Laws

- d) All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-5083, Ext. 526 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

Project Maintenance

- e) The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- f) Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.
- g) The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814

- h) The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- i) The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

j)

Enforcement

- k) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.

Mitigation

- l) NCDOT shall provide compensatory mitigation for the unavoidable impacts to 0.75 acre of wooded wetlands, and 3.64 acres of non-wooded wetlands, associated with Sections A and B of TIP R-2814, by debiting 2.62 acres of riverine and 1.77 acres of non-riverine wetland restoration, and 3.75 acres of riverine wetland preservation, from the Jeffreys Warehouse Mitigation Site (aka JALO), described in the September 17, 2004 "Jeffreys Warehouse Conceptual Mitigation Plan, Wayne County, North Carolina".
- m) NCDOT shall provide compensatory mitigation for the unavoidable impacts to 3,141 linear feet of warm-water streams, associated with Sections A and B of TIP R-2814, as follows:
 - 1. By debiting 3,141 linear feet of stream restoration from the Marks Creek, Phase II, Mitigation Site (AID 2008-02072), described in the September 2001 "Stream and Wetland Mitigation Plan, Marks Creek, Phase II, Wake County, North Carolina".
 - 2. Compensatory mitigation shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated September 20, 2005 from William D. Gilmore, EEP Director; pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 3,141 linear feet of warm-water restoration equivalent stream mitigation, in the Upper Neuse River basin (Hydrologic Cataloging Unit 03020201) by one year of the date of this permit. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

SPECIAL CONDITIONS - Action ID. 2008-01316: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

- n) NCDOT shall provide compensatory mitigation for the unavoidable impacts to wetlands and streams, associated with Sections C and D of TIP R-2814, no later than 5 years in advance of the anticipated construction let date for each section. Specific mitigation information for each of these sections will be provided when NCDOT submits their request to modify the existing permit to allow construction of these later phases once final design has been completed, and the District Commander has made a determination that minimization of impacts has been achieved to the maximum extent practicable.

Threatened and Endangered Species

- o) NCDOT shall implement the ^{nine as 8/1/2009} ~~eight~~ conservation measures listed in NCDOT's December 5, 2005 Biological Assessment for this project, and shall reinitiate consultation with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act for Sections C and D when they are scheduled for construction.

Historic Properties

- o) NCDOT shall comply with its commitments regarding the following historic properties: Timberlake Historic District, Perry-Fuller House, Jeffreys-Ellington Farm, Rogers-Whitaker-Haywood House, and Cascine Plantation. Specifically, NCDOT shall not acquire any right-of-way or easements from these historic properties, and shall use landscaping measures along the properties' right-of-ways (with the exception of the Cascine Plantation), shall provide reasonable access to the property owners.

Culverts

- p) All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent headcutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream unless burial would be impractical and the Corps of Engineers has waived this requirement. For culverts 48 inches in diameter or smaller, the bottom of the pipe must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to, upstream or downstream of the structures. In order to allow for the continued movement of bed load and aquatic organisms, existing stream channel widths and depths will be maintained at the inlet and outlet ends of culverts. Riprap armoring of streams at culvert inlets and outlets shall be minimized above the ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted, woody plants.

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

Preconstruction Meeting

- q) The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office, Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall provide the USACE, Raleigh Regulatory Field Office, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the preconstruction meeting for a time when the USACE and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

Borrow And Waste

- r) To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands. All jurisdictional wetland lines on borrow and waste sites shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with Condition b) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the Condition b). All information will be available to the USACE upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/ TIP R-2814	File Number: 2008-01316	Date: June 24, 2009
Attached is:	See Section below	
<input type="checkbox"/> INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
<input checked="" type="checkbox"/> PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
<input type="checkbox"/> PERMIT DENIAL	C	
<input type="checkbox"/> APPROVED JURISDICTIONAL DETERMINATION	D	
<input type="checkbox"/> PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Ms. Jean Manuele
U.S. Army Corps of Engineers, Wilmington District
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

If you only have questions regarding the appeal process you may also contact:

Mr. Michael Bell
Administrative Appeal Review Officer
CESAD-ET-CO-R
U.S. Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date: _____

Telephone number: _____

DIVISION ENGINEER:
Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-3490



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

June 16, 2009

RECEIVED

JUN 18 2009

RALEIGH REGULATORY FIELD OFFICE

Dr. Greg Thorpe, PhD., Manager
Planning and Environmental Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548

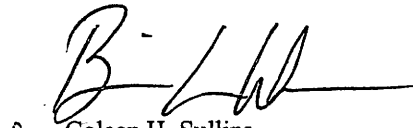
Subject: REVISED 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, NEUSE BUFFER RULES, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS for Proposed improvements to US 401 in Wake County, Federal Aid Project No. STP-401(4), State Project No. 81403001, TIP No. R-2814 (A&B).
NCDWQ Project No. 20090104 ver.1.

Dear Dr. Thorpe:

Attached hereto is a copy of the Revised Certification No. 3790 issued to The North Carolina Department of Transportation (NCDOT) dated June 16, 2009

If we can be of further assistance, do not hesitate to contact us.

Sincerely,


for Coleen H. Sullins
Director

Attachments

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Chris Murray, Division 5 Environmental Officer
Rachelle Beauregard, NCDOT NEU
LeiLani Paugh, NCDOT PDEA
File Copy

Revised 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, NEUSE BUFFER RULES, and ISOLATED WETLANDS PERMIT with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (NCDWQ) Regulations in 15 NCAC 2H .0500, 15A NCAC 2B.0233 and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000. This certification authorizes the NCDOT to impact 2.82 acres of jurisdictional wetlands, 1.58 acres of isolated wetlands, 3,782 linear feet of jurisdictional streams and 488,260 square feet of protected riparian buffers in Wake County. The project shall be constructed pursuant to the application dated received February 2, 2009. The authorized impacts are as described below:

Section A Stream Impacts in the Neuse River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Bank Stabilization to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Bank Stabilization to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	69	0	6	0	0	0	75	0
3	148	0	12	0	0	0	160	0
4	0	0	0	376	32	16	424	376
5	111	0	0	0	0	0	111	0
6	95	31	0	0	0	0	126	0
7	0	0	0	185	13	14	212	185
Total	423	31	18	561	45	30	1108	561

Total Section A Stream Impact for Project: 1,108 linear feet

Preliminary Section B Stream Impacts in the Neuse River Basin*

Site	Permanent Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	281	0	281	0
4	0	115	115	0
6	0	22	22	0
7	0	495	495	495
8	0	518	518	518
9	0	626	626	0
11	0	22	22	0
12	258	0	258	0
16	0	337	337	337
Total	539	2135	2674	1350

Total Preliminary Section B Stream Impact for Project: 2,674 linear feet

**Phased Project: impacts for this section are preliminary and will be modified (including possible temporary impacts) in future certifications prior to construction of this section.*

Section A Wetland Impacts in the Neuse River Basin

Site	Permanent Fill (ac)	Temporary Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)	Mitigation Ratio	Wetland Mitigation Required (ac)
1	0.01	0.01	0	0	0.02	1:1	0.01
2	< 0.01	0	0.01	< 0.01	0.02	1:1	0.02
3	0.03	0	0	0	0.03	1:1	0.03
4	0.01	0	0	0	0.01	1:1	0.01
6	0.08	0	0	0	0.08	2:1	0.16
Total	< 0.14	0.01	0.01	< 0.01	0.16		0.23

Total Section A Wetland Impact for Project: 0.16 acres.

Preliminary Section B Wetland Impacts in the Neuse River Basin *

Site	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)	Mitigation Ratio	Wetland Mitigation Required (ac)
2	0.17	0	0.03	0.20	1:1	0.20
3	0.21	0	0.05	0.26	1:1	0.26
4	0.24	0	0.02	0.26	1:1	0.26
7	0.64	0.10	0.15	0.89	1:1	0.89
13	0.19	0	0	0.19	2:1	0.38
14	0.34	0	0.14	0.48	2:1	0.96
17	0.38	0	0	0.38	1:1	0.38
Total	2.17	0.10	0.39	2.66		3.33

Total Preliminary Section B Wetland Impact for Project: 2.66 acres.

**Phased Project: impacts for this section are preliminary and will be modified (including possible temporary impacts) in future certifications prior to construction of this section.*

Preliminary Section B Isolated Wetland Impacts in the Neuse River Basin *

Site	Permanent Fill (ac)	Total Wetland Impact (ac)	Mitigation Ratio	Wetland Mitigation Required (ac)
15	1.58	1.58	1:1	1.58
Total	1.58	1.58		1.58

Total Preliminary Section B Isolated Wetland Impact for Project: 1.58 acres.

**Phased Project: impacts for this section are preliminary and will be modified (including possible temporary impacts) in future certifications prior to construction of this section.*

Open Water (Ponds) Impacts in the Neuse River Basin

Section / Site	Fill in Open Waters (ac)
A / 6	0.01
*B / 9	1.25
*B / 11	7.29
Total	8.55

Total Open Water Impact for Project: 8.55 acres.

**Phased Project: impacts for Section B are preliminary and will be modified (including possible temporary impacts) in future certifications prior to construction of this section.*

Section A Neuse Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	23783	174	23609	70827	14893	0	14893	22340
2	6809	2918	3891	N/A	6357	0	6357	N/A
3	28137	0	28137	84411	10592	0	10592	15888
4	8999	0	8999	26997	5662	0	5662	8493
Totals	67728	3092	64636	182235	37504	0	37504	46721

* n/a = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

Total Section A Buffer Impact for Project: 105,232 square feet.

Preliminary Section B Neuse Riparian Buffer Impacts*

Site	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	16659	0	16659	49977	10795	0	10795	16193
2	0	0	0	0	308	78	230	345
5	24014	4830	19184	57552	6146	1192	4954	7431
6	506	0	506	N/A	0	0	0	N/A
7	33763	28915	4848	14544	16966	8416	8550	12825
8	28103	0	28103	84309	15151	0	15151	22727
9	54775	0	54775	164325	31813	0	31813	47719
10	3169	0	3169	9507	5385	0	5385	8077
11	23441	0	23441	70323	13334	0	13334	20001
12	18124	0	18124	54372	15041	0	15041	22562
15	19154	16637	2517	7551	15890	8113	7777	11665
16	19130	0	19130	57390	11361	45	11316	16974
Totals	240838	50382	190456	569850	142190	17844	124346	186519

* n/a = Total for road crossing site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

Total Preliminary Section B Buffer Impact for Project: 383,028 square feet.

**Phased Project: impacts for this section are preliminary and will be modified (including possible temporary impacts) in future certifications prior to construction of this section.*

The application provides adequate assurance that the discharge of fill material into the waters of the Neuse River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application dated received February 2, 2009. Should your project change, you are required to notify the NCDWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 02B.0233(6). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit. **This certification replaces the one issued on April 23, 2009.**

Conditions of Certification:

1. When final design plans are completed for R-2814 Section B, and any future sections, a modification to the 401 Water Quality Certification and the Neuse River Riparian Buffer Certification shall be submitted with five copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, surface waters, or buffers located in R-2814 Section B, or any future sections, shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification and the Neuse River Riparian Buffer Authorization from the NC Division of Water Quality.
2. Compensatory mitigation for 1,911 linear feet of impact to perennial streams is required. We understand that you have chosen to debit mitigation from the Marks Creek Mitigation Bank. This certification gives approval to the debiting of 1,911 linear feet of stream mitigation from the Marks Creek Mitigation Site in order to satisfy the stream mitigation requirements of R-2814 A and B.

3. Compensatory mitigation for impacts to jurisdictional and isolated wetlands is required. The mitigation requirement includes 3.56 acres of jurisdictional wetlands and 1.58 acres of isolated wetlands. We understand that you have chosen to debit mitigation from the Jefferey's Warehouse Mitigation Bank. This certification gives approval to debiting following wetland acres from the Jefferey's Warehouse Mitigation Site in order to satisfy the wetland mitigation requirements of R-2814 A and B:

Riverine Wetland Restoration: 2.62 acres

Non-Riverine Wetland Restoration: 1.77 acres

Riverine Wetland Preservation: 3.75 acres (0.75 acres times 5:1 preservation ratio)

4. Compensatory mitigation for impacts to Neuse Riparian Buffers is required. The mitigation requirement includes 752,085 square feet of Zone 1 Buffers and 233,240 square feet of Zone 2 Buffers. We understand that you have chosen to debit mitigation from the Wiggins Mill Mitigation Bank. This certification gives approval to the debiting of 985,325 square feet of Neuse Buffer from the Wiggins Mill Mitigation Site in order to satisfy the wetland mitigation requirements of R-2814 A and B.

5. A copy of the final construction drawings shall be furnished to NCDWQ Central Office prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application dated received February 2, 2009. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Quality.

6. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species. The permittee shall observe any natural channel re-establishment, or utilize natural channel construction techniques, to ensure that the jurisdictional stream channel above and below the drained pond remains stable, and that no additional impacts occur within the natural stream channel as a result of draining the pond.

7. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

8. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

9. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

10. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.

11. For project sites impacting waters classified by the NC Environmental Management Commission as High Quality Waters (HQW), or Water Supply I or II (WSI, WSII), (i.e., Cedar Fork Creek, Perry Creek, and their tributaries in Section B), stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged.

12. The permittee shall use */Design Standards in Sensitive Watersheds/* [15A NCAC 4B.0124(a)-(e)] in areas draining to WS-II HQW waters (i.e., Cedar Fork Creek, Perry Creek and their tributaries in Section B). Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover shall be planted on all bare soil within 15 business days of ground disturbing activities to provide erosion control. Coir fiber matting shall be used in conjunction with appropriate seeding on disturbed soils involving steep slopes in riparian areas, and should be secured in place with staples and wherever possible include installation of live stakes of native trees.

Straw mulch and tall fescue shall not be used in the establishment of temporary or permanent groundcover within riparian zones. Coir fiber matting shall be used in conjunction with appropriate seeding for the establishment of permanent herbaceous cover on disturbed soils within the riparian area. Hydro seeding along with wood or cellulose based hydro mulch applied from a fertilizer and limestone free tank is allowable at the appropriate rate for the establishment of temporary groundcover within riparian zones. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.

13. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.

14. Pursuant to NCAC15A 2B.0233(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by NCDWQ. At this time, NCDWQ has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.

15. All stormwater runoff shall be directed as sheetflow through stream buffers at nonerosive velocities, unless otherwise approved by this certification.

16. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

17. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.

18. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.

19. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.

20. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.

21. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

22. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.

23. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.

24. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.

25. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
26. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If NCDWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, NCDWQ may reevaluate and modify this certification.
27. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification..
28. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
29. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
30. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
31. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
32. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify NCDWQ when all work included in the 401 Certification has been completed.
33. Native woody riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
34. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
35. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
36. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.

for Crooked Creek and Cedar Creek are located in Franklin County, which is experiencing less intensive development. The potential indirect effects to the project streams associated with existing and future development in the watersheds could result in impacts to the DWM. The DWM population in Cedar Creek may have already been affected as is evidenced by the apparent reduction in range within the creek. These effects are continuing to occur. The indirect and cumulative effects to the DWM resulting from NCDOT's actions (the construction of R-2814) are minimal. This conclusion is based on the Indirect and Cumulative Effects (ICE) assessment information which indicates that the watersheds containing this project will experience significant development with or without the completion of R-2814.

4.0 CONSERVATION MEASURES

The potential direct effects that could result from the construction of the US 401 Widening/Rolesville Bypass will likely be averted by NCDOT by implementing several conservation measures. Conservation measures include those measures that are taken to avoid and or minimize effects to the DWM as a result of project construction.

The following measures were discussed and agreed upon by NCDOT and USFWS on May 4, 2005. Construction-related Environmental Commitments that will minimize the likelihood of direct effects to the DWM will be implemented regardless of the conservation option chosen. These include:

- Clearing of riparian areas will be minimized to the fullest extent practical to reduce direct effects to the species.
- The use of HQW erosion control standards or other erosion control standards approved by USFWS throughout the construction process in all areas within the project right-of-way that are located in the Little River, Crooked Creek and Cedar Creek watersheds.
- As project design information becomes available for Section C and Section D of R-2814, NCDOT will provide written notice of this information to the USFWS (Raleigh Field Office) and the NCWRC non-game and protected species program.
- NCDOT will schedule meetings and/or field meetings to discuss these design plans in order to develop specific methods to avoid/minimize direct effects to Little River, Crooked Creek, and Cedar Creek.
- NCDOT will conduct an interim mussel survey/instream habitat evaluation at the Crooked Creek and Little River survey locations (Section C), and at the Cedar Creek survey location (Section D) after Let Dates have been established for each of these sections.
- The final pre-construction mussel surveys/instream habitat evaluations will be conducted in the project footprint and immediately downstream for Crooked Creek and Little River (Section C) and Cedar Creek (Section D) before these sections are let for construction.

Summary of Sediment and Erosion Control Measures used to protect DWM

- The NCDOT recognizes the importance of minimizing the effects to the endangered species located downstream in the streams crossed by this project. The Department will implement BMP's that meet or exceed the current practices and regulations that mandate environmental protection (NCDOT 2003).
- The North Carolina Sedimentation Pollution Control Act of 1973 requires 15 working days or 30 calendar days to stabilize erodible areas once grading has been completed. The Department will strictly adhere to these guidelines.
- Sections of this project are located in the Neuse River Basin and others in the Tar-Pamlico River Basin. Both of these river basins have buffer rules that were designed to restrict activities occurring in and near riparian areas of the streams within these two basins. Adherence to these regulations will further insure sediment and erosion control during the construction of this project.

Changes in Design

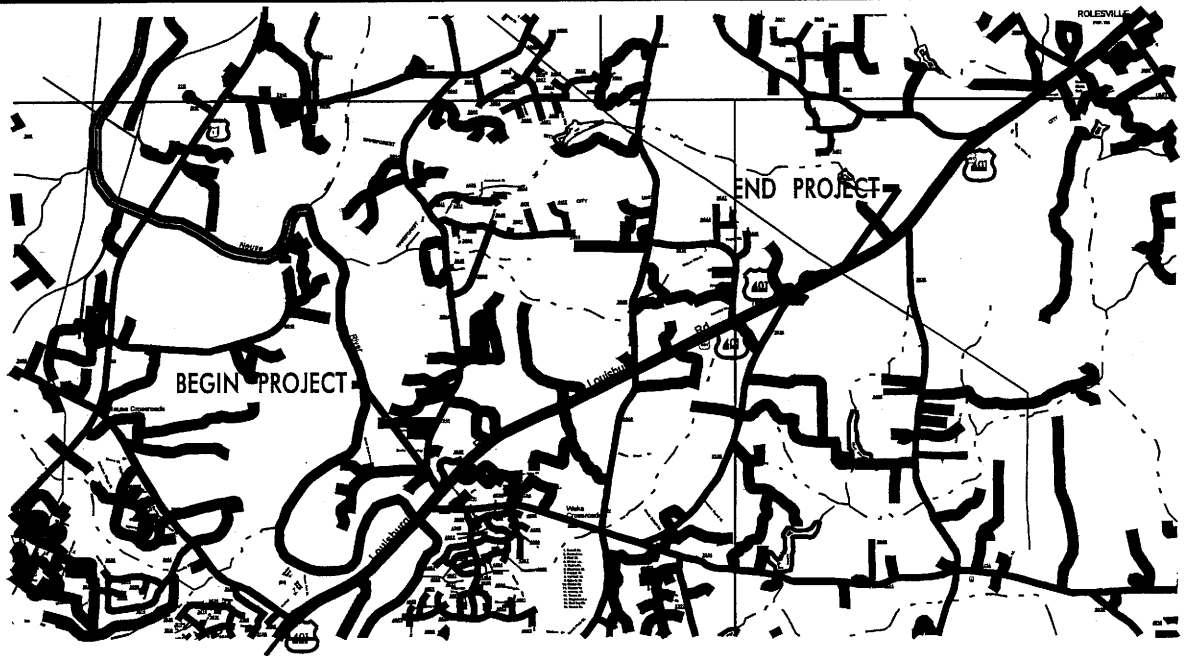
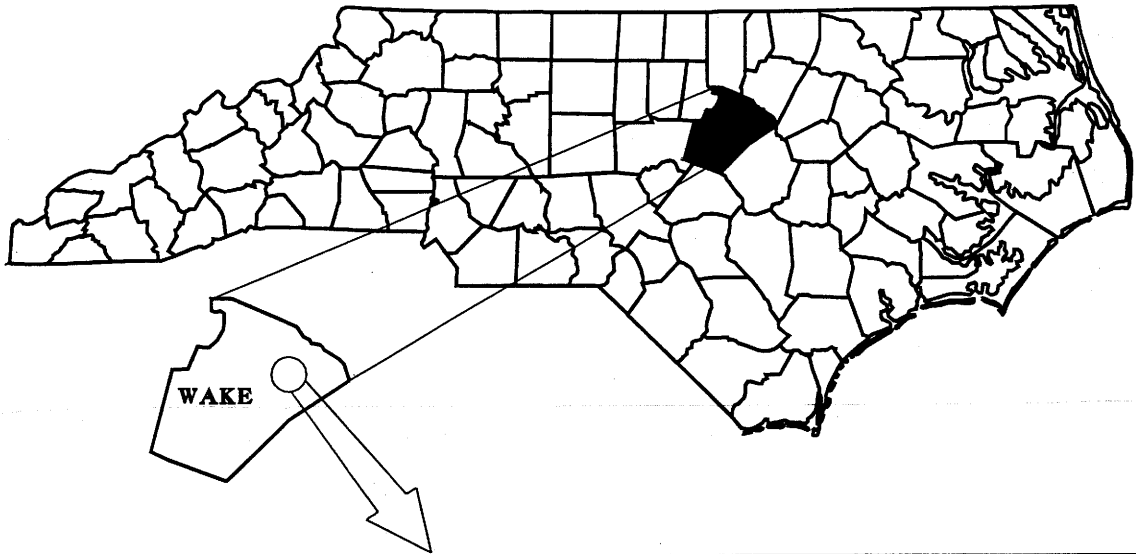
The following are conservation measures that NCDOT implemented as a result of the avoidance and minimization components of the National Environmental Policy Act (NEPA)/ CWA § 404 Merger 01 process:

- NCDOT originally studied widening scenarios to the east and the west of existing US 401. After Merger Team review, NCDOT developed an asymmetrical widening in order to minimize impacts to resources.
- Slope stakes were adjusted along the widening portions to further minimize stream and wetland impacts.
- During the Concurrence Point 2 meeting, alternatives along Section B of the proposed project were adjusted to minimize impacts to wetlands and cross streams more perpendicularly.
- A curb and gutter segment originally proposed for Section C of the project has been changed to a grassed shoulder segment.
- NCDOT will avoid using bridge drains that will drain over waterways.

Biological Conclusion: May Affect, Not Likely to Adversely Affect

The negative effects from previous development, beaver dam construction, and point source dischargers have likely contributed to the apparent reduction in the range of DWM in Cedar Creek and continues to restrict the upstream range of the species in Little River and Crooked Creek. NCDOT believes that these patterns in the watersheds will continue even without the Rolesville Bypass/US 401 widening project. Potential direct effects from the proposed project

NORTH CAROLINA



WETLAND VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
WAKE COUNTY
PROJECT: 34506.11 (R-2814A)
US 401
LOUISBURG ROAD FROM
SR 2044 TO SR 2226

PROPERTY OWNER

NAME AND ADDRESS

OWNER'S NAME	ADDRESS
WAKE HIGH MEADOWS HOMEOWNERS ASSOCIATION	4948 WINDY HILL DRIVE RALEIGH, NC 27609
ALDRED LEE PERRY	4105 LOUISBURY ROAD WAKE FOREST, NC 27587
BRIGHTON COMMUNITY ASSOCIATION	1100 NAVAHO DRIVE, SUITE GL3 RALEIGH, NC 27609
VBBSS GROUP, LLC	4960 ROYAL ADELAIDE WAY RALEIGH, NC 27604
PERRY FARM, LLC	404 EMERSON DRIVE RALEIGH, NC 27609
HT FORESTVILLE, LLC	135 SOUTH MAIN STREET, SUITE 105 GREENVILLE, SC 29601

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE COUNTY
 PROJECT: 34506.1.1 (R-2814A)
 US 401
 LOUISBURG ROAD FROM
 SR 2044 TO SR 2226
 SHEET 2 OF 15 04/07/08

WETLAND PERMIT IMPACT SUMMARY													
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS					
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Hand Clearing in Wetlands (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (m)	Existing Channel Impacted (m)	Natural Stream Design (m)	
1	-L- 12+35 RT	450 mm RCP	0.004	0.029				0.007				23	
2	-L- 12+80 RT	1.0 m Lateral Base Ditch	0.018		0.003	0.017							
3	-L- 15+90 RT to -L- 16+05 RT	900 mm RCP	0.010					0.182			7.140	49	
4	-L- 19+10 LT	1200 mm RCP	0.002					0.018			9.900	119	
5	-L- 19+10	900 mm RCP						0.005				37	
6	-L- 32+60 to -L- 33+90	900 mm RCP outfall pipe and Pond *	0.033					0.004		0.004	9.500	29	
7	-L- 35+80 to -L- 36+50	1050 mm RCP						0.016			4.000	61	
TOTALS:			0.068	0.029	0.003	0.017		0.234	0.004	0.004	30.540	317.510	0.000

* Temporarily Draining Pond to install rock fill

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE COUNTY
 PROJECT 34506.1.1 R-2814A
 Sheet 3 of 15
 11/20/2008

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS					
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Hand Clearing in Wetlands (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ft)	Existing Channel Impacted (ft)	Natural Stream Design (ft)		
1	-L- 12+35 RT	18" RCP	0.01	0.01					0.02				69	
1	-L- 12+35 RT	Stream Bank Stabilization											6	
2	-L- 12+80 RT	3 ft Lateral Base Ditch	<0.01		0.01	<0.01								
3	-L- 15+90 RT to -L- 16+05 RT	36" RCP	0.03					0.04					148	
3	-L- 15+90 RT to -L- 16+05 RT	Stream Bank Stabilization											12	
4	-L- 19+10 LT	48" RCP	0.01						0.05				376	
4	-L- 19+10 LT	Stream Bank Stabilization											16	
5	-L- 19+10	Pavement							0.01				111	
6	-L- 32+60 to -L- 33+90	36" mm RCP outfall pipe and Pond	0.08						0.01	0.01		31	95	
7	-L- 35+80 to -L- 36+50	42" RCP							0.04			13	185	
7	-L- 35+80 to -L- 36+50	Stream Bank Stabilization											14	
TOTALS:			<0.13	0.01	0.01	<0.01	0.00	0.16	0.01	0.01	76	1032		

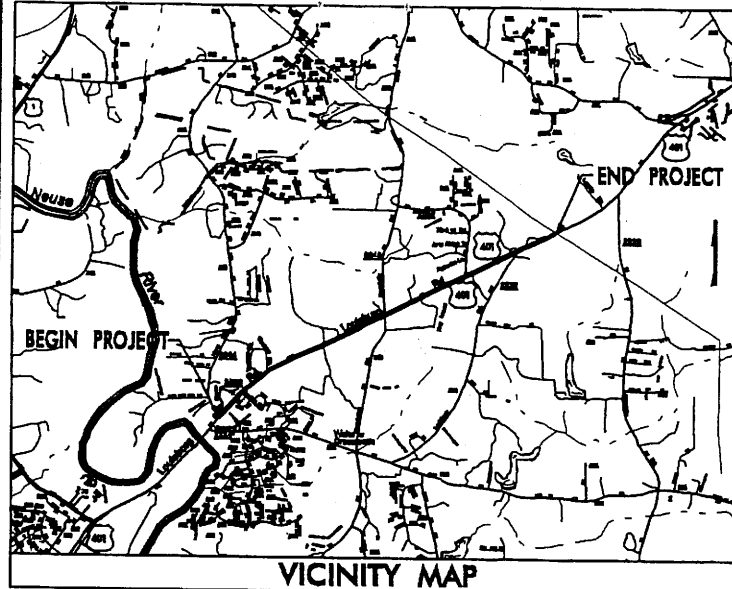
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE COUNTY
PROJECT 34506.1.1 R-2814A
 Sheet **11** of **15**

CONTRACT:

19-NOV-2008 14:39
F:\hydro\pub\ca\perp\drawings\10-20-08\streams and wetlands\R-2814a-prntsh_wet.dgn

TIP: R-2814A

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RECEIVED

WAKE COUNTY

JAN 30 2009

Regulatory Branch

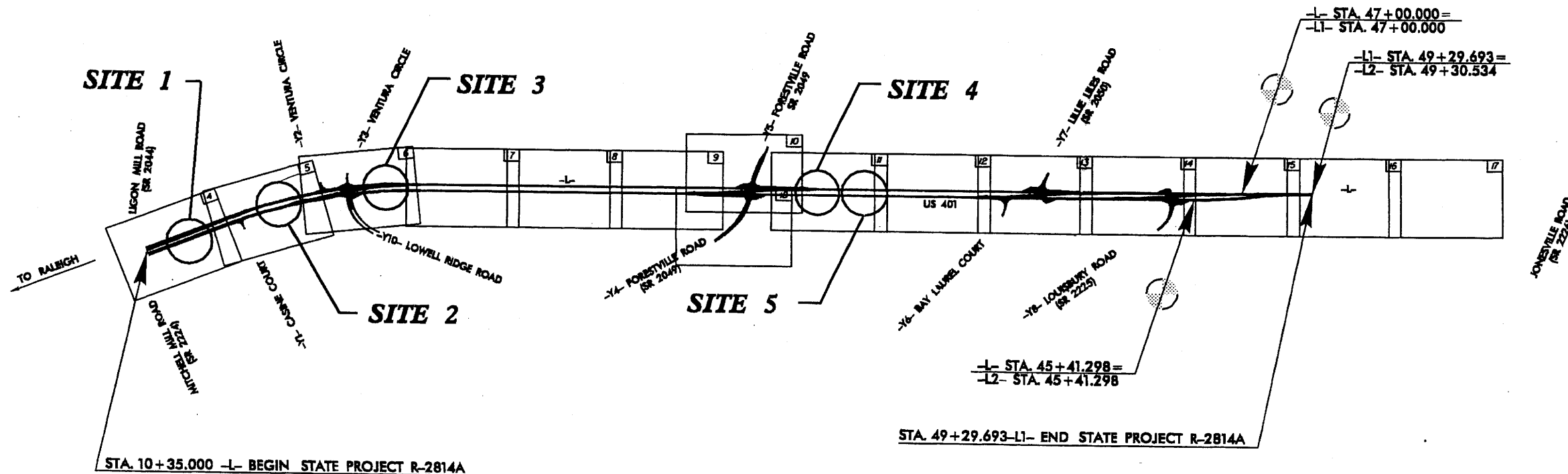
LOCATION: US 401 FROM SR 2044 (LIGON MILL ROAD)
TO SOUTH OF SR 2226 (JONESVILLE ROAD)

2008-01316

Permit Drawing Sheet 5 of 15

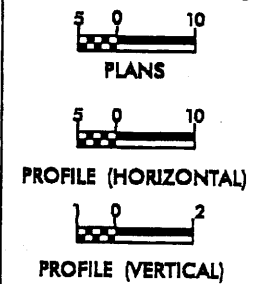
TYPE OF WORK: GRADING, DRAINAGE AND PAVING

R-2814A: STREAM & WETLAND SITE MAP



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____
NOTE: THIS IS A PARTIALLY CONTROLLED ACCESS PROJECT WITH ACCESS POINTS SHOWN ON THE PLANS
NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

GRAPHIC SCALES



DESIGN DATA

ADT 2005 = 16,200
ADT 2030 = 28,100
DHV = 13 %
D = 55 %
T = 7 % *
V = 100 km/h
* TTST 2 % DUAL 5 %

PROJECT LENGTH

LENGTH ROADWAY F. A. PROJECT STP-401(4) = 3.895km
TOTAL LENGTH TIP PROJECT R-2814A = 3.895km

Prepared in the Office of:



for the North Carolina Department of Transportation

1995 STANDARD SPECIFICATIONS

DOT CONTACT

RIGHT OF WAY DATE:
July 21, 2006

J. S. GOODNIGHT, P.E.
PROJECT ENGINEER

LETTING DATE:
March 17, 2009

MARK HUSSEY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR A/C CONSTRUCTION

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

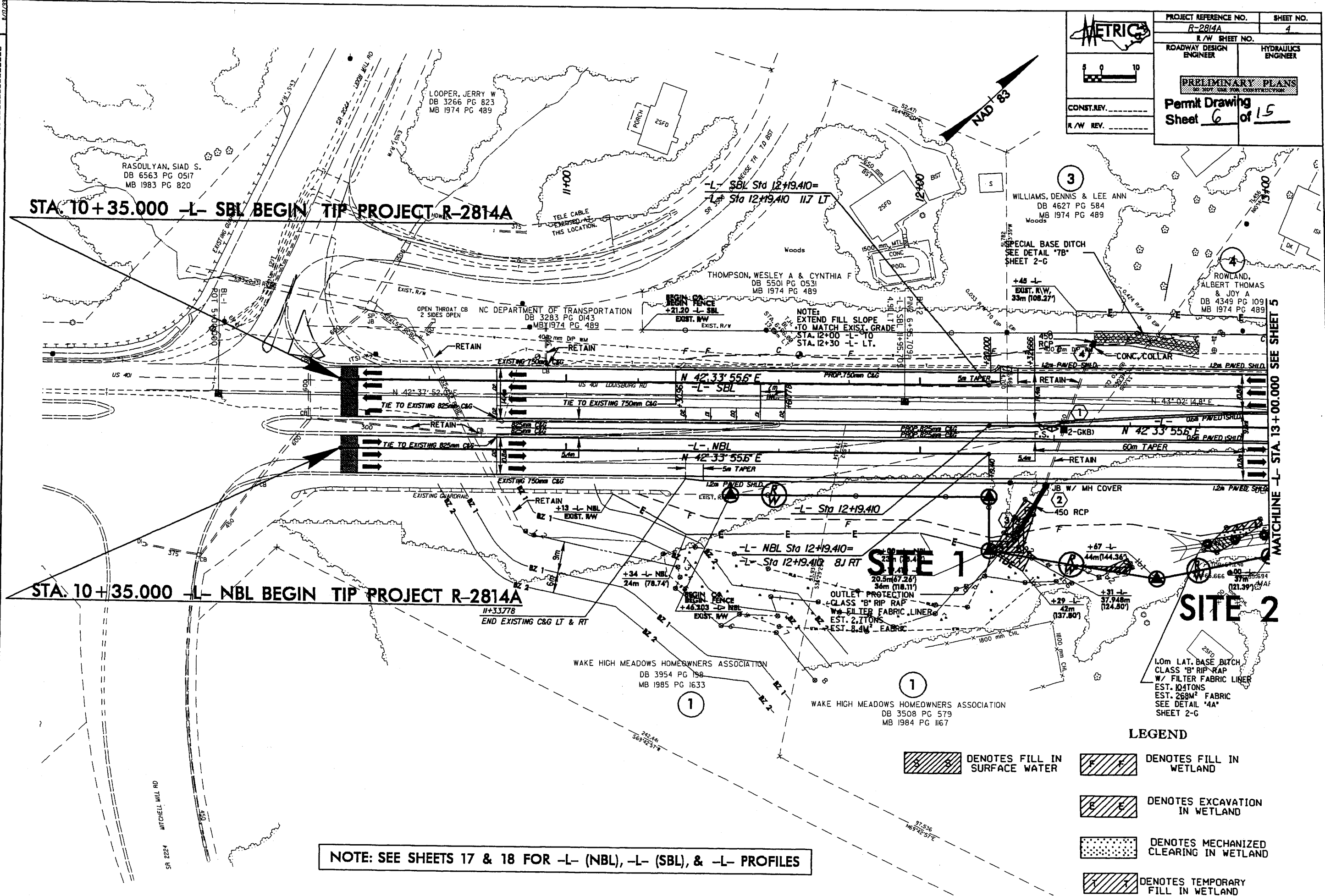


STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO. R-2814A		SHEET NO. 4
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS		
Permit Drawing Sheet <u>6</u> of <u>15</u>		
CONST. REV.		
R/W REV.		

3 WILLIAMS, DENNIS & LEE ANN
 DB 4627 PG 584
 MB 1974 PG 489
 SPECIAL BASE DITCH
 SEE DETAIL '7B'
 SHEET 2-G
 +45 -L-
 EXIST. R/W,
 33m (108.27')

4 ROWLAND, THOMAS & JOY A
 DB 4349 PG 109
 MB 1974 PG 489



STA. 10+35.000 -L- SBL BEGIN TIP PROJECT R-2814A

STA. 10+35.000 -L- NBL BEGIN TIP PROJECT R-2814A

MATCHLINE -L- STA. 13+00.000 SEE SHEET 5

NOTE: SEE SHEETS 17 & 18 FOR -L- (NBL), -L- (SBL), & -L- PROFILES

LEGEND

- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND

REVISIONS
 R/W REVISION - 05/09/08 - PER SUBMITTAL OF MARCH 19, 2008 - ELIMINATED THE RIGHT-OF-WAY AND ADDED A TEMPORARY CONSTRUCTION EASEMENT ON PARCELS 3 AND 4. PARCEL 2 CHANGED TO PARCEL 1.

1-NOV-2008 025
 2-NOV-2008 025
 3-NOV-2008 025



PROJECT REFERENCE NO. SHEET NO.

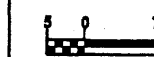
R-2814A 4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS

Permit Drawing
Sheet 7 of 15



CONST. REV.

R/W REV.

STA. 10 + 35.000 -L- SBL BEGIN TIP PROJECT R-2814A

STA. 10 + 35.000 -L- NBL BEGIN TIP PROJECT R-2814A

NOTE: SEE SHEETS 17 & 18 FOR -L- (NBL), -L- (SBL), & -L- PROFILES

REVISIONS
R/W REVISION - 05/09/08 - PER SUBMITTAL OF MARCH 19, 2008 - ELIMINATED THE RIGHT OF WAY AND ADDED A TEMPORARY CONSTRUCTION EASEMENT ON PARCELS 3 AND 4. PARCEL 2 CHANGED TO PARCEL 1.

MATCHLINE -L- STA. 13 + 00.000 SEE SHEET 5

LEGEND



DENOTES FILL IN SURFACE WATER



DENOTES FILL IN WETLAND



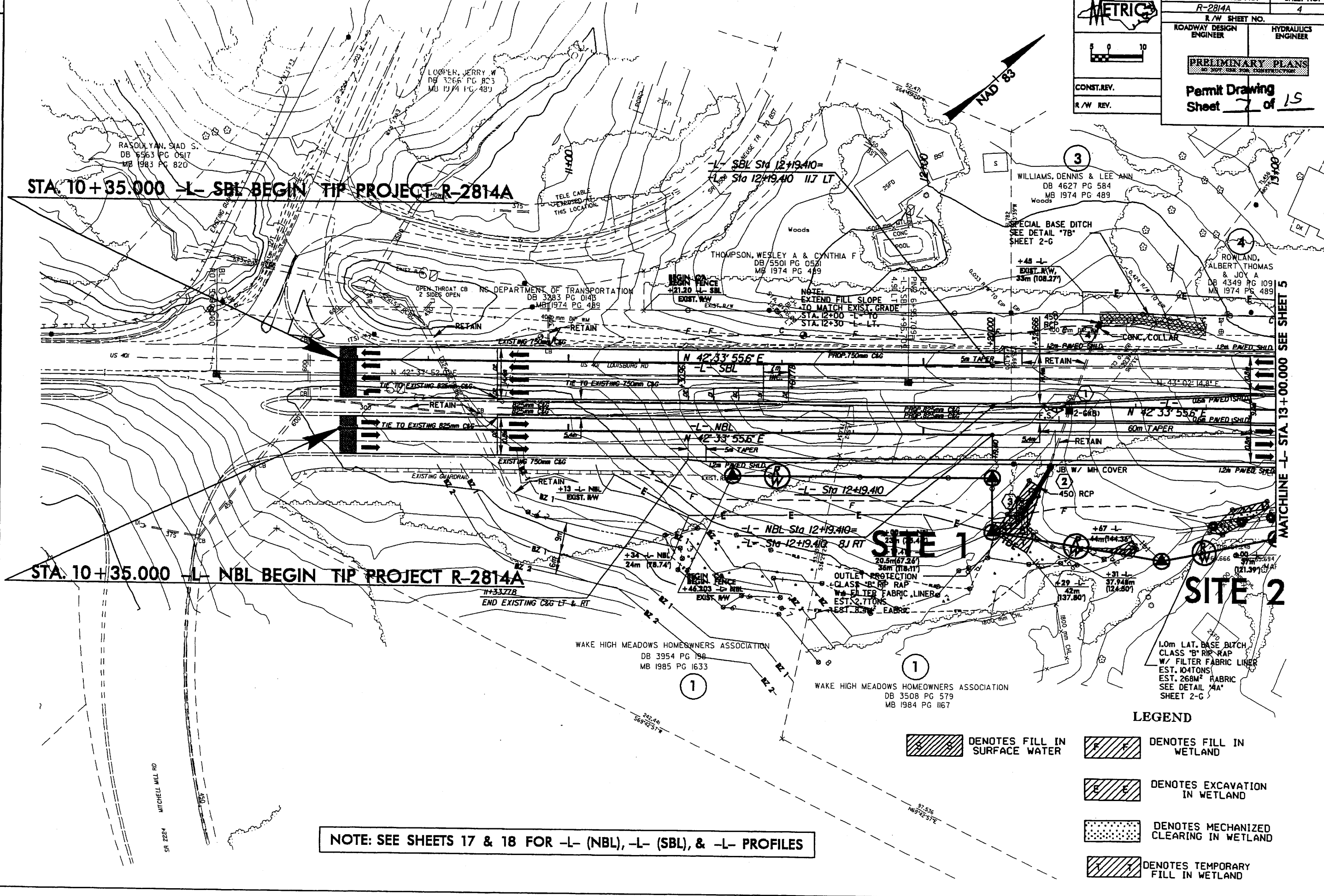
DENOTES EXCAVATION IN WETLAND



DENOTES MECHANIZED CLEARING IN WETLAND



DENOTES TEMPORARY FILL IN WETLAND



5/17/08

NAD '83

3

4

SITE 1
31.1 (1.4)
20.5m(67.26')
30m(98.41')

SITE 2
37.948m(124.50')
42m(137.80')

1

1

2

RASOULYAN, SIAD S.
DB 6563 PG 0617
MB 1983 PG 820

LOOPER, JERRY W.
DB 3266 PG 003
MB 1974 PG 489

THOMPSON, WESLEY A & CYNTHIA F.
DB/5501 PG 0541
MB 1974 PG 489

WILLIAMS, DENNIS & LEE ANN
DB 4627 PG 584
MB 1974 PG 489

ROWLAND, ALBERT THOMAS & JOY A.
DB 4349 PG 109
MB 1974 PG 489

NC DEPARTMENT OF TRANSPORTATION
DB 3283 PG 014B
MB 1974 PG 489

WAKE HIGH MEADOWS HOMEOWNERS ASSOCIATION
DB 3954 PG 198
MB 1985 PG 1633

WAKE HIGH MEADOWS HOMEOWNERS ASSOCIATION
DB 3508 PG 579
MB 1984 PG 1167

MITCHELL MILL RD
SR 2224

OPEN THROAT CB
2 SIDES OPEN

NOTE:
EXTEND FILL SLOPE
TO MATCH EXIST. GRADE
STA. 12+00 -L- TO
STA. 12+30 -L- LT.

SPECIAL BASE DITCH
SEE DETAIL '7B'
SHEET 2-G

+45 -L-
DIST. RW,
33m(108.27')

+13 -L- NBL
EXST. RW

+46.303 -L- NBL
EXST. RW

+67 -L-
44m(144.35')

+31 -L-
37.948m(124.50')

END EXISTING C&G -L- & RT
11+33.728

OUTLET PROTECTION
CLASS 'B' RIP-RAP
W/ FILTER FABRIC LINER
EST. 2.7 TONS

1.0m LAT. BASE DITCH
CLASS 'B' RIP-RAP
W/ FILTER FABRIC LINER
EST. 10.4 TONS
EST. 268M² FABRIC
SEE DETAIL '4A'
SHEET 2-G

11/23/05

10/28/05

10/28/05

10/28/05

10/28/05

10/28/05

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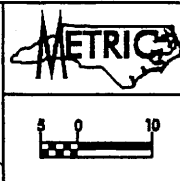
10/28/05

10/28/05

10/28/05

10/28/05

10/28/05

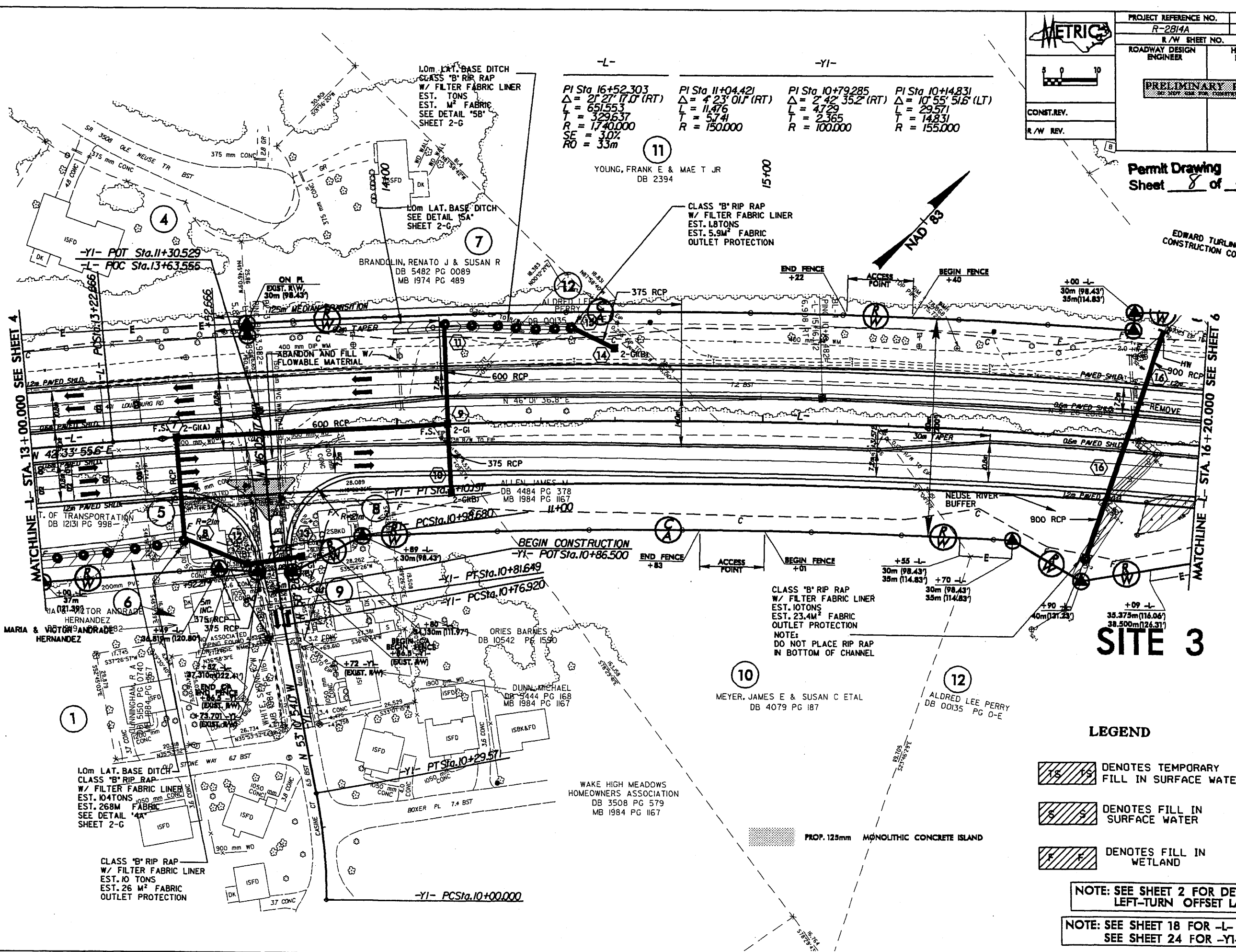


PROJECT REFERENCE NO.	SHEET NO.
R-2814A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT BE USED FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

Permit Drawing
Sheet 8 of 15

EDWARD TURLINGTON
CONSTRUCTION COMPANY

-L-	-YI-
PI Sta 16+52.303 Δ = 2° 27' 17.0" (RT) L = 651.553 T = 329.637 R = 1740.000 SE = 3.0% RO = 33m	PI Sta 11+04.421 Δ = 4° 23' 01.7" (RT) L = 11.476 T = 5.741 R = 150.000
	PI Sta 10+79.285 Δ = 2° 42' 35.2" (RT) L = 4.729 T = 2.365 R = 100.000
	PI Sta 10+14.831 Δ = 10° 55' 51.6" (LT) L = 29.571 T = 14.831 R = 155.000



REVISIONS
 RAW REVISION - 05/09/08 - PER SUBMITTAL OF MARCH 19, 2008 - ELIMINATED THE RIGHT OF WAY AND ADDED A TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 4. PARCEL 2 CHANGED TO PARCEL 1. REDUCED THE RIGHT OF WAY ON PARCEL 7 AND 12.

SITE 3

LEGEND

- DENOTES TEMPORARY FILL IN SURFACE WATER
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN WETLAND

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

NOTE: SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 24 FOR -YI- PROFILE

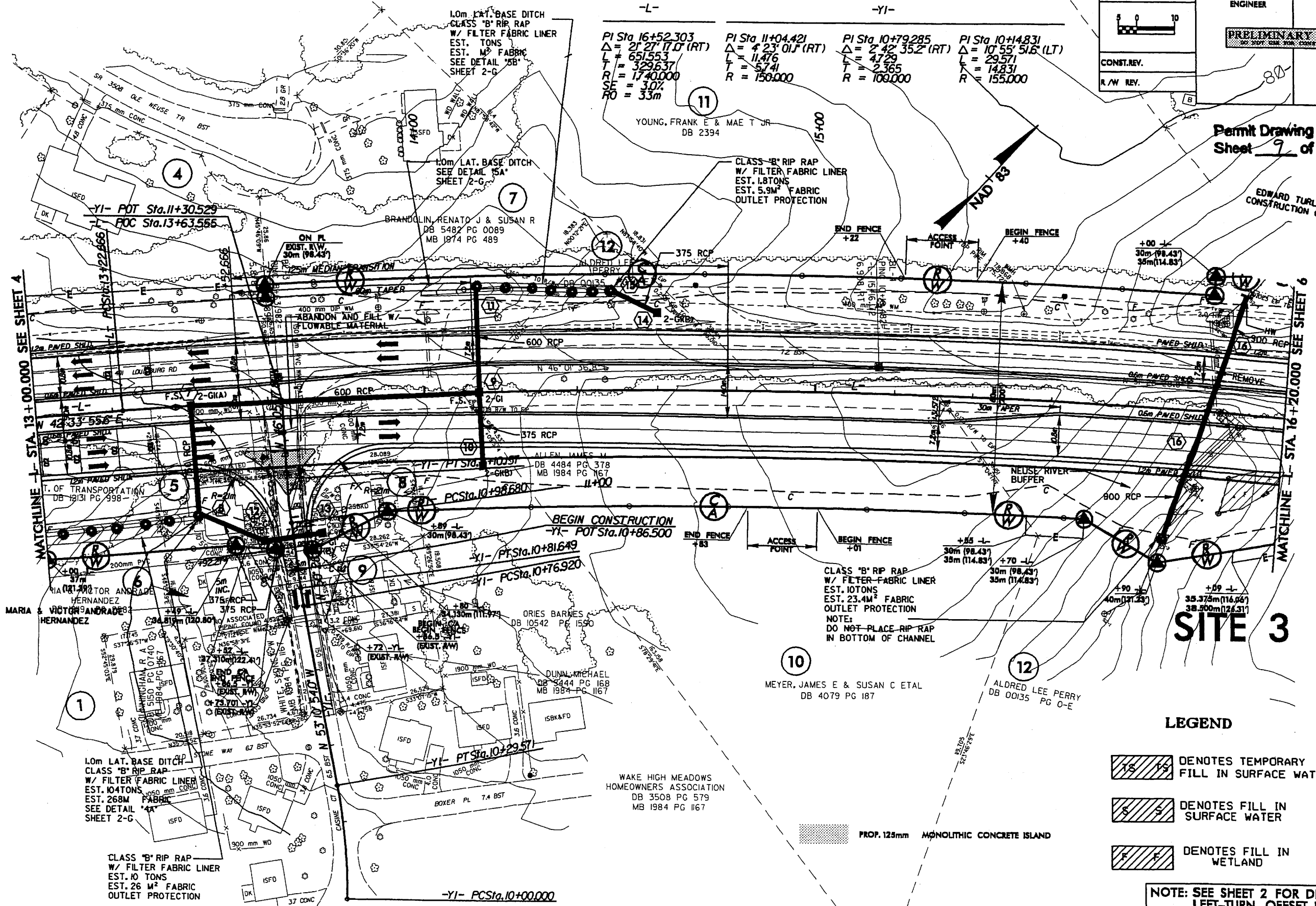
24-05-2008 1304
 24-05-2008 1304
 24-05-2008 1304

PROJECT REFERENCE NO. R-2814A		SHEET NO. 5
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
PRELIMINARY PLANS		
CONST. REV.		
R/W REV.		

Permit Drawing
Sheet 9 of 15

EDWARD TURLINGTON
CONSTRUCTION COMPANY

R/W REVISION - 05/09/08 - PER SUBMITTAL OF MARCH 19, 2008 - ELIMINATED THE RIGHT OF WAY AND ADDED A TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 4. PARCEL 2 CHANGED TO PARCEL 1. REDUCED THE RIGHT OF WAY ON PARCEL 7 AND 12.

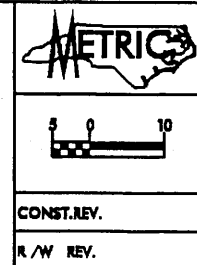


Station	PI Sta	Δ	L	T	R	SE	FO
-L-	16+52.303	21' 27" (RT)	651.553	329.637	1740.000	3.0%	33m
-YI-	11+04.421	4' 23" (RT)	11.476	5.741	150.000		
-YI-	10+79.285	2' 42" (RT)	4.729	2.565	109.000		
-YI-	10+14.831	10' 55" (LT)	29.571	14.831	155.000		

- LEGEND**
- DENOTES TEMPORARY FILL IN SURFACE WATER
 - DENOTES FILL IN SURFACE WATER
 - DENOTES FILL IN WETLAND

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE
 NOTE: SEE SHEET 18 FOR -L- PROFILE
 NOTE: SEE SHEET 24 FOR -YI- PROFILE

20-000-2008 1504
 20-000-2008 1504
 20-000-2008 1504



PROJECT REFERENCE NO.	SHEET NO.
R-2814A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
Permit Drawing Sheet 10 of 15	

-L-	-Y2-	-Y3-
PI Sta 16+52.303 Δ = 2° 27' 17.0" (RT) L = 651.553 T = 329.637 R = 1740.000 SE = 3.0% RO = 33m	PI Sta 10+64.019 Δ = 34° 50' 28.7" (LT) L = 51.779 T = 26.718 R = 85.550	PI Sta 10+13.436 Δ = 19° 04' 01.6" (LT) L = 26.623 T = 13.436 R = 80.000
		-Y10-
		PI Sta 11+09.797 Δ = 6° 49' 44.9" (LT) L = 164.027 T = 91.023 R = 152.000

LEGEND

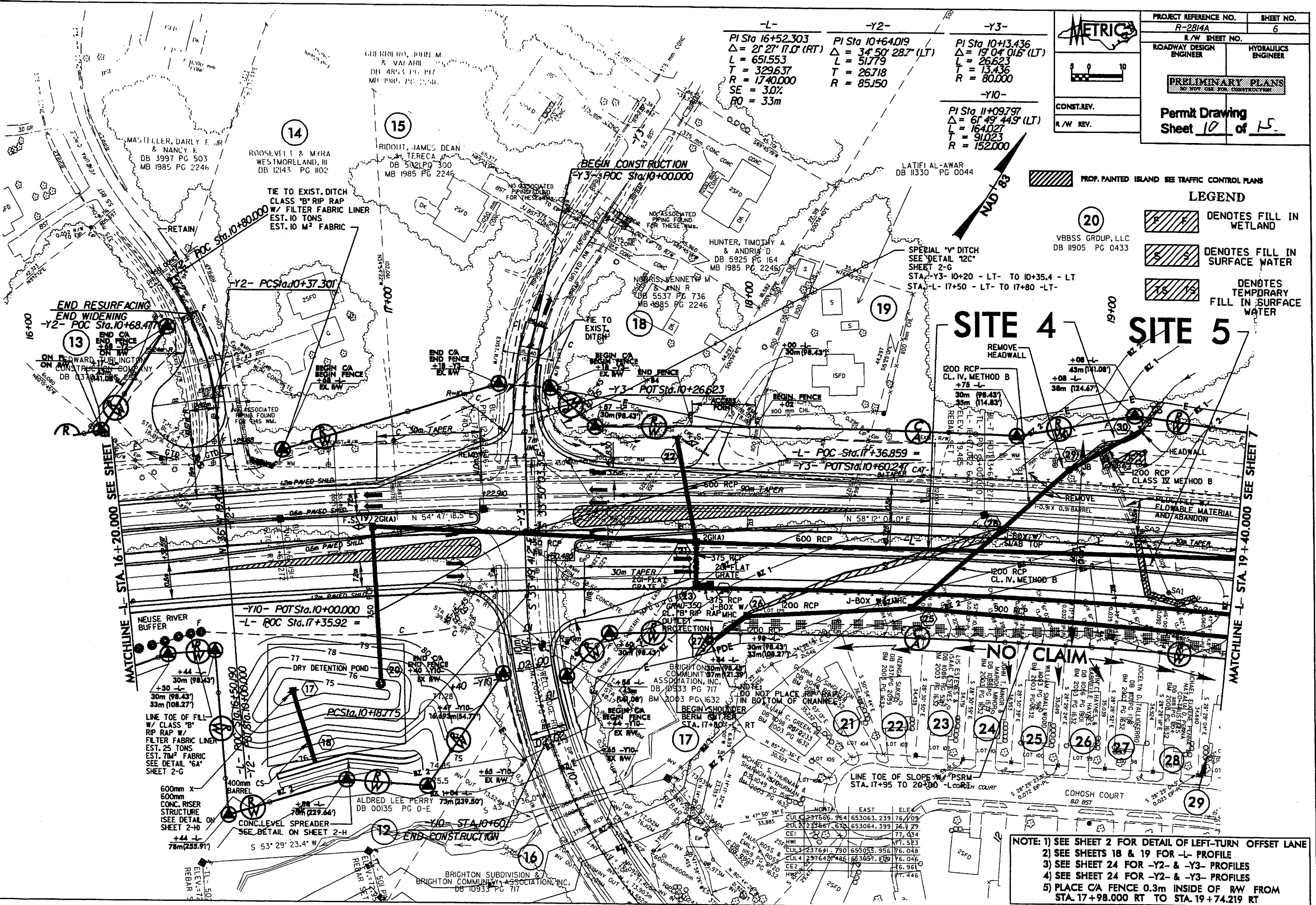
PROF. PAINTED ISLAND SEE TRAFFIC CONTROL PLANS

20 VBBSS GROUP, LLC DB 11905 PG 0433

DENOTES FILL IN WETLAND
 DENOTES FILL IN SURFACE WATER
 DENOTES TEMPORARY FILL IN SURFACE WATER

SITE 4 **SITE 5**

R/W REVISION - 09/13/07 -
 R/W REVISION - 05/09/08
 R/W REVISION - 06/10/08 - PER SUBMITTAL OF MARCH 19, 2008 - REVISED RIGHT OF WAY AND ELIMINATE PERMIT OFFSET CONSTRUCTION EASEMENT ON PARCEL 15



NOTE:

- 1) SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE
- 2) SEE SHEETS 18 & 19 FOR -L- PROFILE
- 3) SEE SHEET 24 FOR -Y2- & -Y3- PROFILES
- 4) SEE SHEET 24 FOR -Y2- & -Y3- PROFILES
- 5) PLACE C/A FENCE 0.3m INSIDE OF R/W FROM STA. 17+98.000 RT TO STA. 19+74.219 RT

METRIC

PROJECT REFERENCE NO. R-2814A SHEET NO. 6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS

Permit Drawing Sheet 11 of 15

CONST. REV. R/W REV.

-L-	-Y2-	-Y3-
PI Sta 16+52.303	PI Sta 10+64.019	PI Sta 10+13.436
$\Delta = 21' 21" 17.0' (RT)$	$\Delta = 34' 50" 28.7' (LT)$	$\Delta = 19' 04" 01.6' (LT)$
L = 651.553	L = 51.779	L = 266.23
T = 3296.37	T = 26.718	T = 13.436
R = 1740.000	R = 85.150	R = 80.000
SE = 3.0%		
RO = 33m		

-Y10-
PI Sta 11+09.797
$\Delta = 61' 49" 44.9' (LT)$
L = 164.027
T = 91.023
R = 152.000

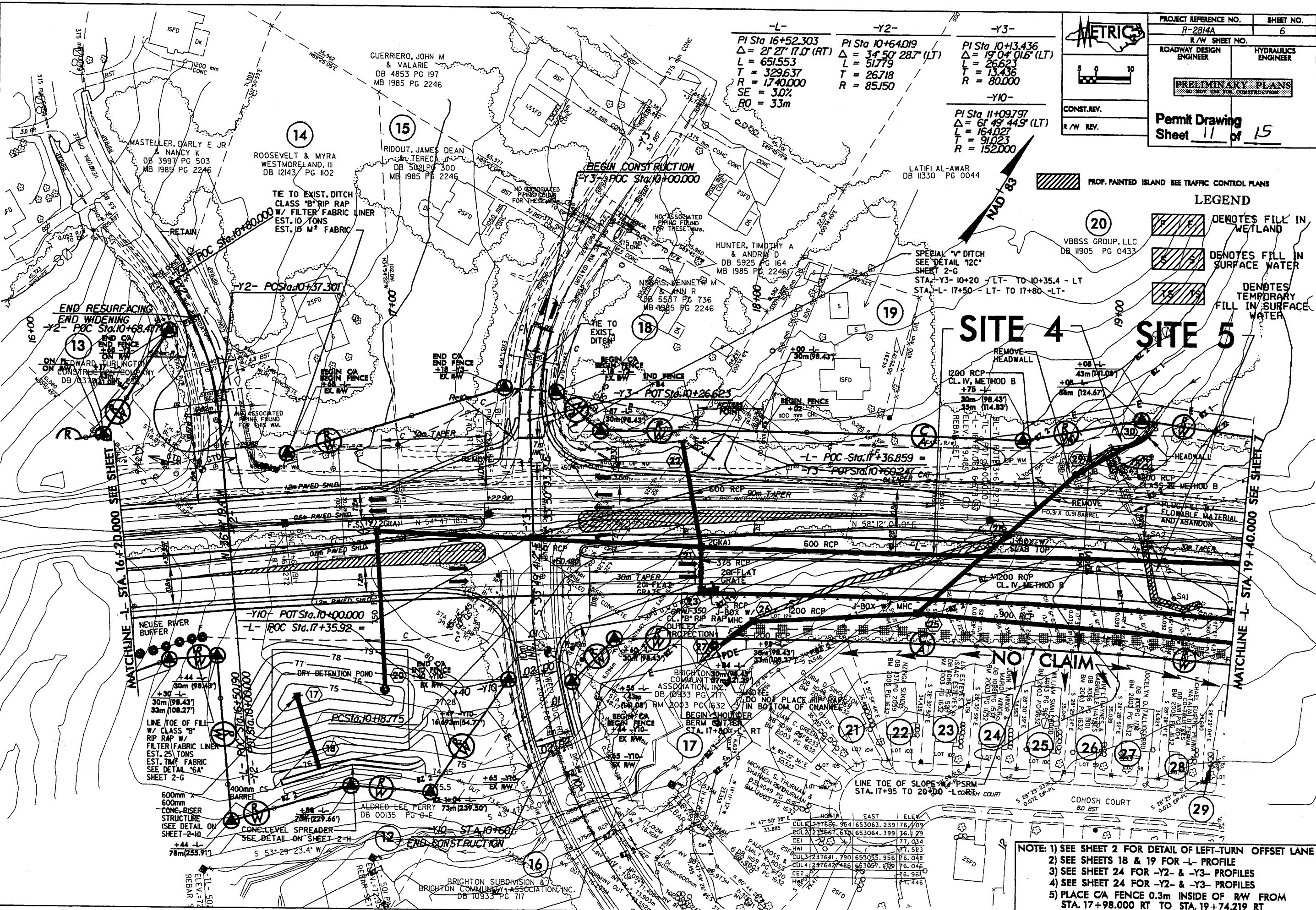
LEGEND

- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES TEMPORARY FILL IN SURFACE WATER

PROF. PAINTED ISLAND SEE TRAFFIC CONTROL PLANS

VBBSS GROUP, LLC DB 1905 PG 0433

R/W REVISION - 09/13/07 -
 R/W REVISION - 05/09/08
 R/W REVISION - 06/10/08 - PER SUBMITTAL OF MARCH 19, 2008 - REVISED RIGHT OF WAY AND ELIMINATE TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 15

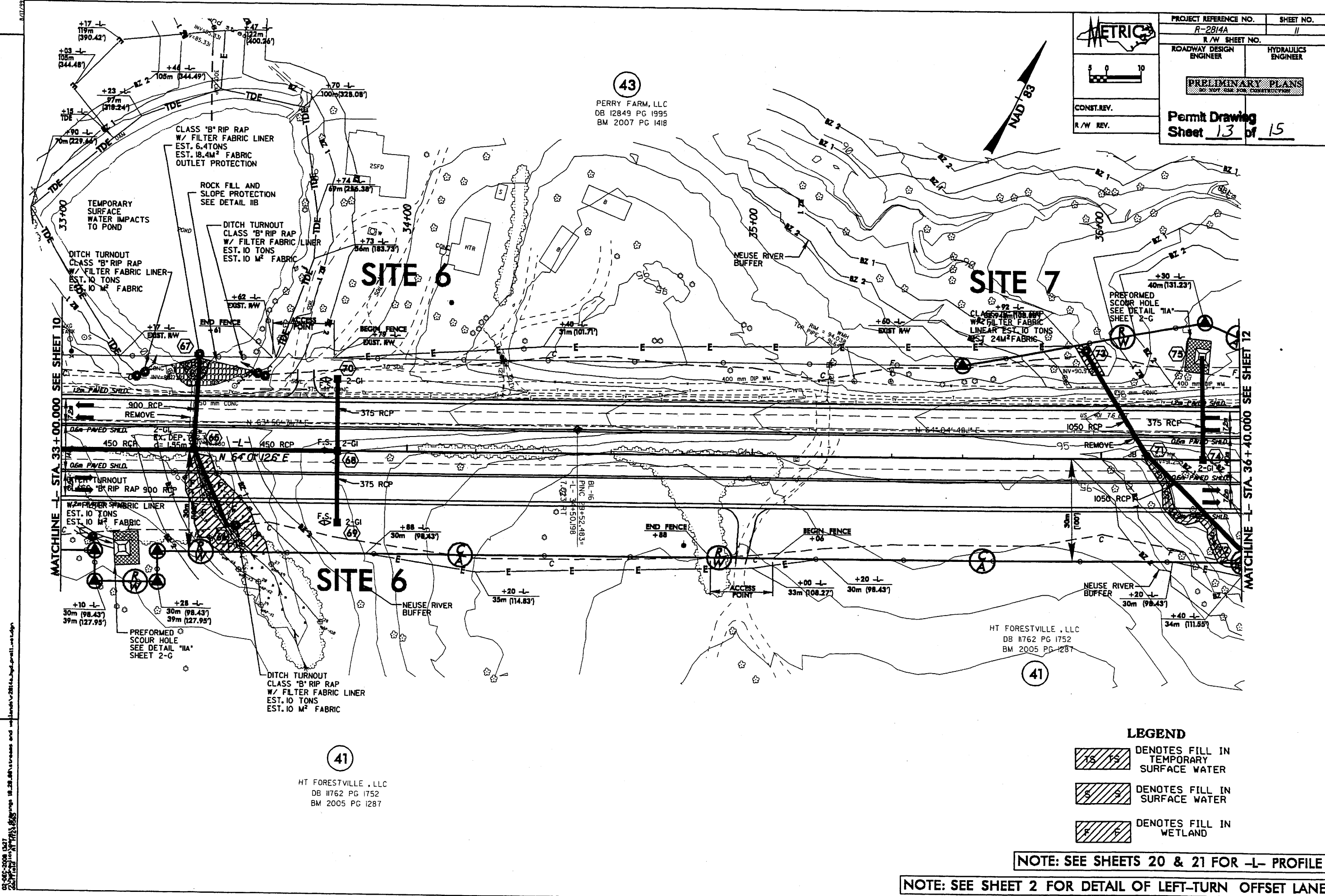


NOTE:

- 1) SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE
- 2) SEE SHEETS 18 & 19 FOR -L- PROFILE
- 3) SEE SHEET 24 FOR -Y2- & -Y3- PROFILES
- 4) SEE SHEET 24 FOR -Y2- & -Y3- PROFILES
- 5) PLACE CA FENCE 0.3m INSIDE OF RW FROM STA. 17+98.000 RT TO STA. 19+74.219 RT

14-NOV-2008 147
 24-NOV-2008 147

	PROJECT REFERENCE NO.	SHEET NO.
	R-2814A	11
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>		
Permit Drawing Sheet <u>13</u> of <u>15</u>		
CONST. REV.		
R/W REV.		



43
 PERRY FARM, LLC
 DB 12849 PG 1995
 BM 2007 PG 1418

41
 HT FORESTVILLE, LLC
 DB 11762 PG 1752
 BM 2005 PG 1287

41
 HT FORESTVILLE, LLC
 DB 11762 PG 1752
 BM 2005 PG 1287

- LEGEND**
- DENOTES FILL IN TEMPORARY SURFACE WATER
 - DENOTES FILL IN SURFACE WATER
 - DENOTES FILL IN WETLAND

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

02-06-2008 15:37
 C:\Users\james\Documents\Projects\18-28-08\Access and subdrain\2814a.dwg, jll, 11/11/08

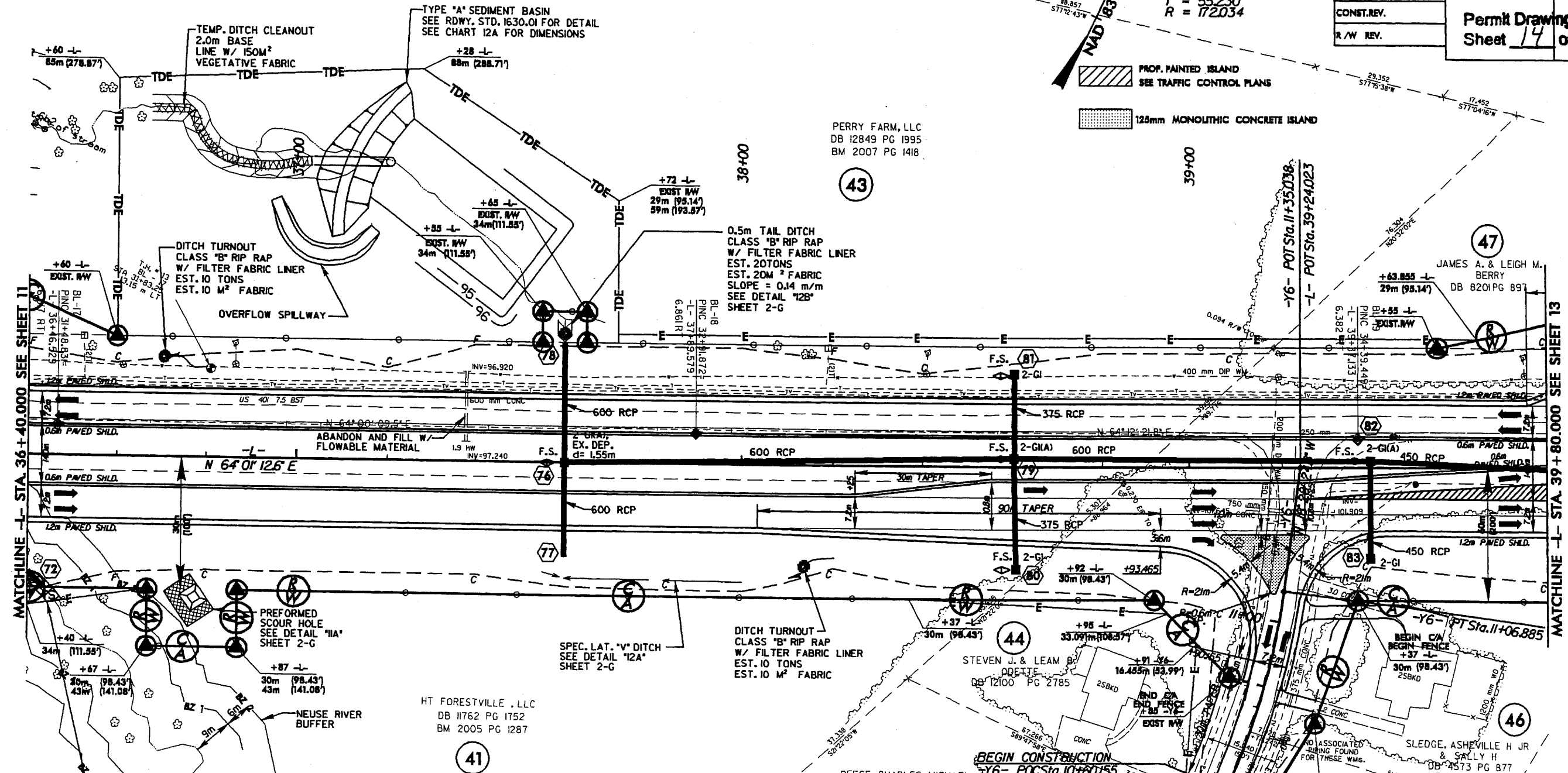
CHART 12A

BASH #	APPROX. STA.	P	H	T	D	E	F	R	X	Y	XI	YI	SURFACE AREA (sqm)	STORAGE VOLUME (cu m)
1	37+00 LT.	0.3	2.0	2.7	2.0	46	2.4	2.1	0.6	1.8	0.6	0.6	890	482

-Y6-
 PI Sta 10+55.231
 $\Delta = 35.35^\circ 52' (LT)$
 $L = 106.884$
 $T = 55.230$
 $R = 172034$

PROP. PAINTED ISLAND
 SEE TRAFFIC CONTROL PLANS

125mm MONOLITHIC CONCRETE ISLAND



SITE 7

- LEGEND**
- DENOTES FILL IN SURFACE WATER
 - DENOTES FILL IN TEMPORARY SURFACE WATER


NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

NOTE: SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 25 FOR -Y6- PROFILE

REVISIONS
 14 NOV 2008 0.3
 20 MAR 2012 1.2
 20 MAR 2012 1.2

CHART 12A

BASIN #	APPROX. STA.	P	H	T	D	E	F	B	X	Y	XI	YI	SURFACE AREA (sqm)	STORAGE VOLUME (cu m)
1	37+00 LT.	0.8	0.3	2.0	2.7	2.0	.46	2.4	2.1	0.6	1.8	0.6	880	482



PROJECT REFERENCE NO. R-2814A SHEET NO. 12

R/W SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS

Permit Drawing Sheet 15 of 25

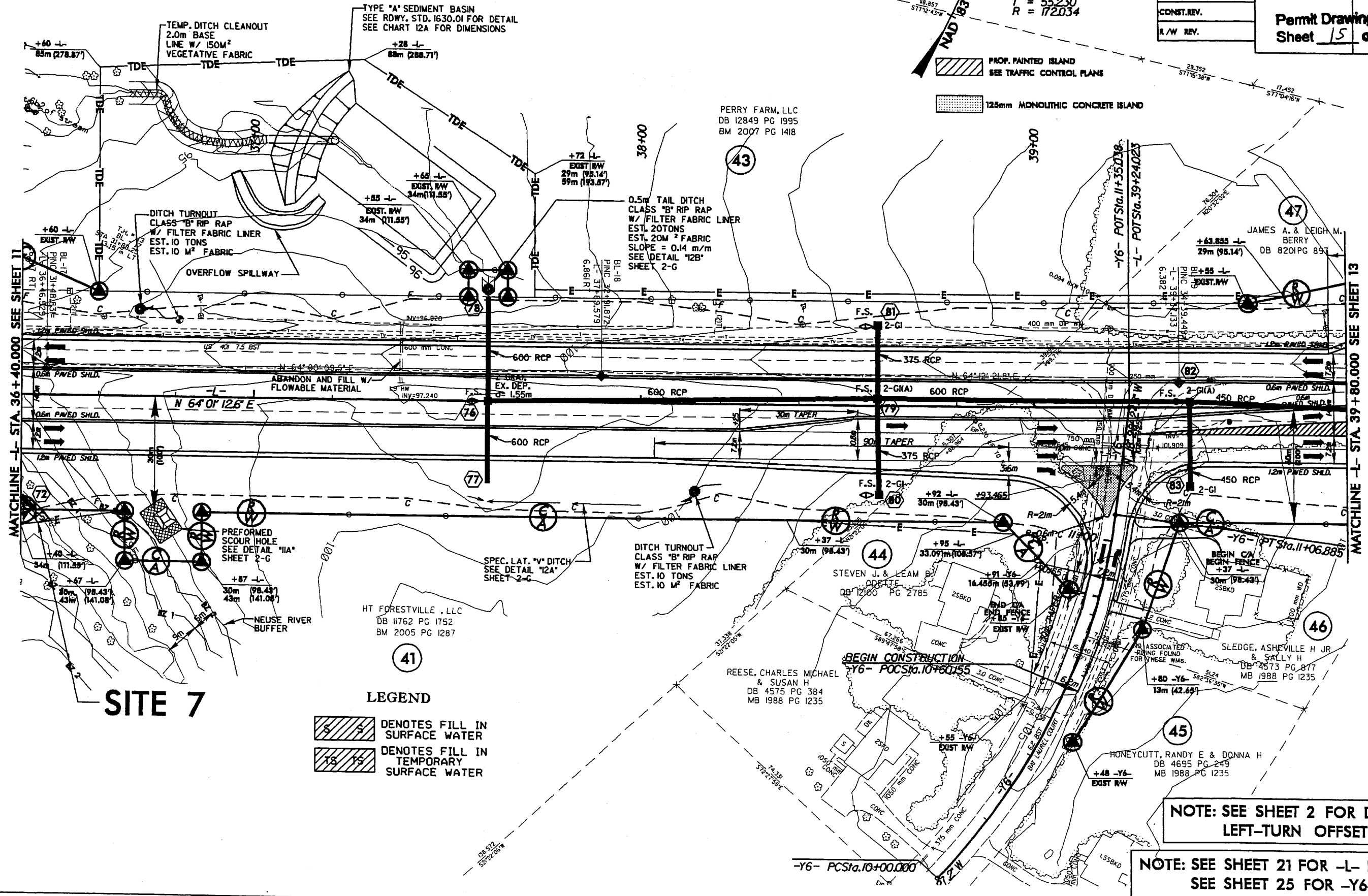
CONST. REV. R/W REV.

-Y6-

PI Sta. 10+55.231
 $\Delta = 35^\circ 35' 52.0'' (LT)$
 $L = 106.884$
 $T = 55.230$
 $R = 172034$

PROP. PAINTED ISLAND
SEE TRAFFIC CONTROL PLANS

125mm MONOLITHIC CONCRETE ISLAND



SITE 7

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

NOTE: SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 25 FOR -Y6- PROFILE

14-001-2008 031
 21-001-2008 031
 22-001-2008 031
 23-001-2008 031
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 96-001-2008 031
 97-001-2008 031
 98-001-2008 031
 99-001-2008 031
 100-001-2008 031

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT						BUFFER REPLACEMENT				
			TYPE		ALLOWABLE		MITIGABLE		REPLACEMENT		TOTAL (ft ²)		
			ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)			
1	Outfall Pipe	-L- Sta 17+70 to 19+25	X					23783	13504		37287		
				X					1389		1389		
2	Roadway Fill	-L- Sta 19+00 Rt to 19+45 Rt	X		6809	6357	13166						
3	Outfall Pipe and Pond	-L- Sta 32+60 to 33+90	X					28137	10592		38729		
4	Cross Pipe	-L- Sta 35+80 to 36+50 (impacts > 150')	X					8999	5662		14660		
TOTAL:					6809	6357	13166	60919	31146		92065		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE COUNTY
PROJECT: 34506.1.1 (R-2814A)

11/17/2008
SHEET 3 OF 7

BUFFER IMPACTS SUMMARY

		WETLANDS IN BUFFERS		
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ZONE 1 (sq. ft)	ZONE 2 (sq ft)
1	48" RCP	-L- Sta 17+70 to 19+25	174	
2	Outfall pipe	-L- Sta 33+40 Rt	2918	
TOTAL:			3092	0.0

COMMENTS

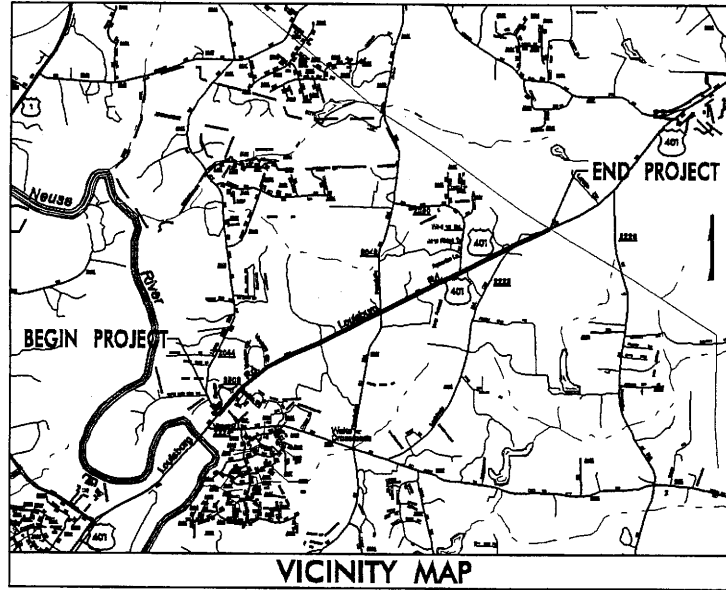
N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 WAKE COUNTY
 PROJECT: 34506.1.1 (R-2814A)

 9/15/2008
 SHEET 9 OF 9

09/09/99

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

LOCATION: US 401 FROM SR 2044 (LIGON MILL ROAD)
TO SOUTH OF SR 2226 (JONESVILLE ROAD)

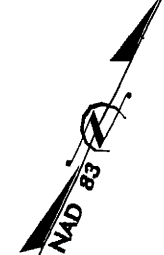
TYPE OF WORK: GRADING, DRAINAGE AND PAVING

R-2814A: BUFFER SITE MAP

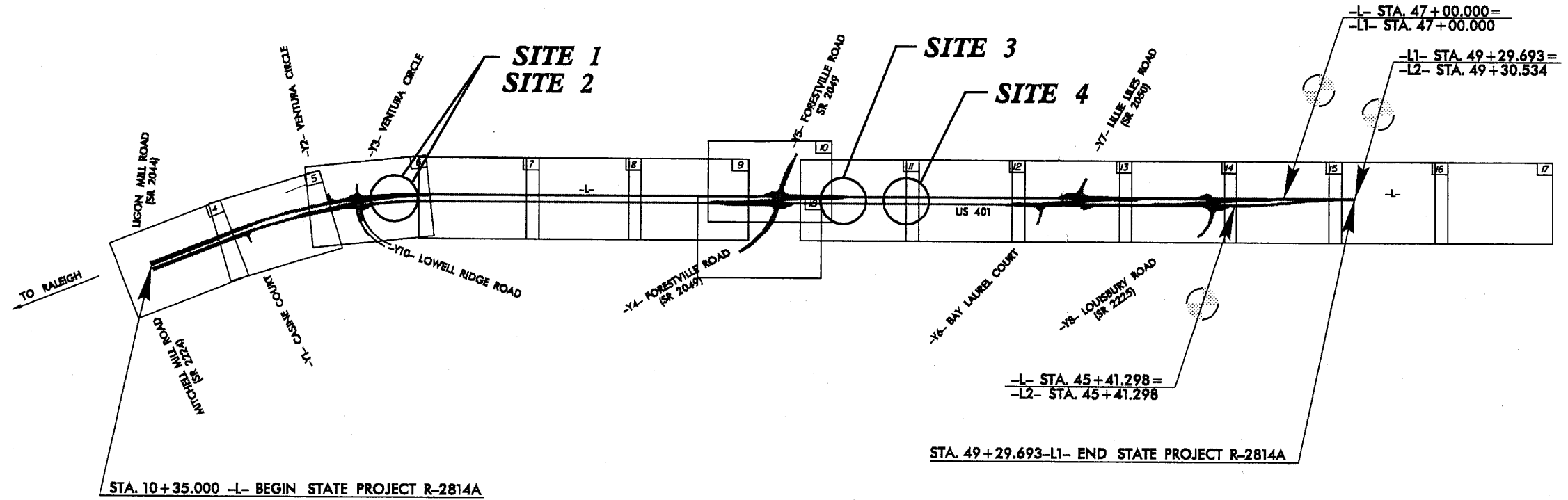
STATE N.C.	STATE PROJECT REFERENCE NO. R-2814A	SHEET NO. 1	TOTAL SHEETS
	STATE PROJ. NO. 34506.1.1	P.A. PROJ. NO. STP-401(4)	DESCRIPTION P.E.

METRIC
ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

Buffer Drawing Sheet 5 of 9



TIP: R-2814A



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____
NOTE: THIS IS A PARTIALLY CONTROLLED ACCESS PROJECT WITH ACCESS POINTS SHOWN ON THE PLANS
NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/F ACQUISITION

GRAPHIC SCALES PLANS PROFILE (HORIZONTAL) PROFILE (VERTICAL)	DESIGN DATA ADT 2005 = 16,200 ADT 2030 = 28,100 DHV = 13 % D = 55 % T = 7 % * V = 100 km/h * TTST 2 % DUAL 5 %
--	--

PROJECT LENGTH LENGTH ROADWAY F. A. PROJECT STP-401(4) = 3.895km TOTAL LENGTH TIP PROJECT R-2814A = 3.895km	
--	--

Prepared In the Office of: for the North Carolina Department of Transportation 1995 STANDARD SPECIFICATIONS DOT CONTACT	
RIGHT OF WAY DATE: July 21, 2006	J. S. GOODNIGHT, P.E. PROJECT ENGINEER
LETTING DATE: March 17, 2009	MARK HUSSEY PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER SIGNATURE: _____ P.E.

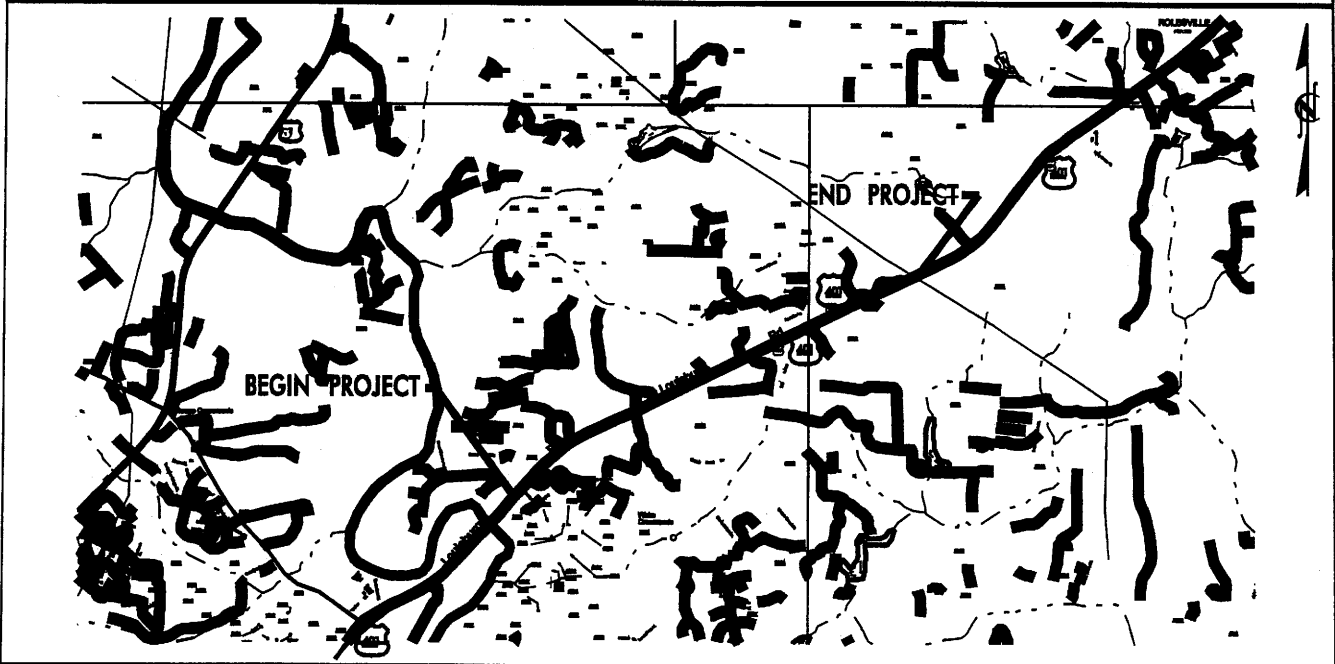
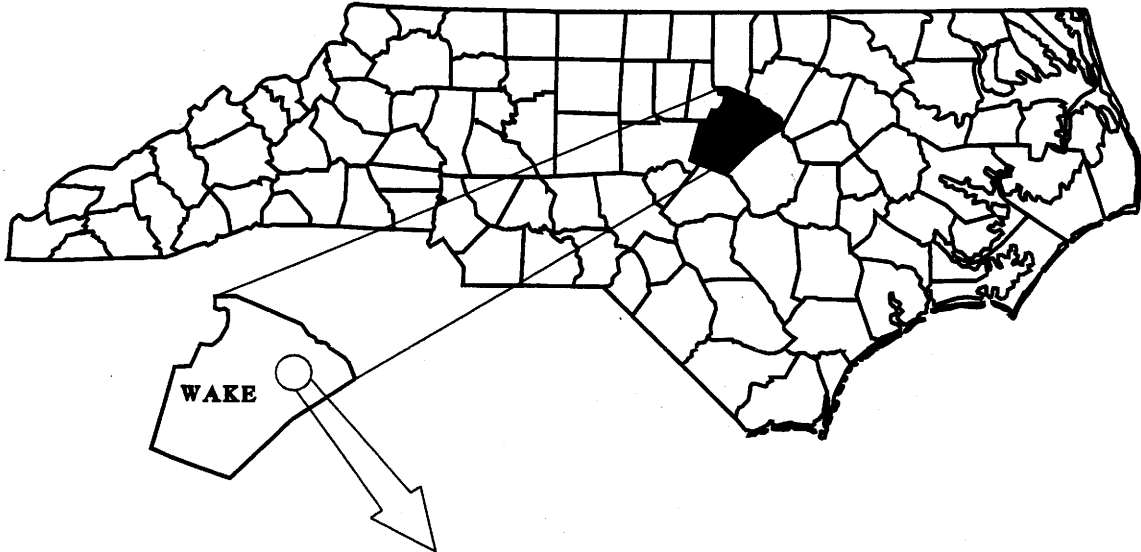
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

20 NOV 2008 15:36
C:\projects\10_20_08\08\buf\ers\1_2814a\prmtsh_buf.dgn

CONTRACT:

NORTH CAROLINA



BUFFER VICINITY MAP

NCDOT

DIVISION OF HIGHWAYS

WAKE COUNTY

PROJECT: 34506.1.1 (R-2814A)

US 401

LOUISBURG ROAD FROM

SR 2044 TO SR 2226

SHEET 1 OF 9

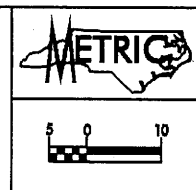
11/20/08

PROPERTY OWNER

NAME AND ADDRESS

OWNER'S NAME	ADDRESS
WAKE HIGH MEADOWS HOMEOWNERS ASSOCIATION	4948 WINDY HILL DRIVE RALEIGH, NC 27609
ALDRED LEE PERRY	4105 LOUISBURY ROAD WAKE FOREST, NC 27587
BRIGHTON COMMUNITY ASSOCIATION	1100 NAVAHO DRIVE, SUITE GL3 RALEIGH, NC 27609
VBBSS GROUP, LLC	4960 ROYAL ADELAIDE WAY RALEIGH, NC 27604
PERRY FARM, LLC	404 EMERSON DRIVE RALEIGH, NC 27609
HT FORESTVILLE, LLC	135 SOUTH MAIN STREET, SUITE 105 GREENVILLE, SC 29601

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE COUNTY
PROJECT: 34506.1.1 (R-2814A)
US 401
LOUISBURG ROAD FROM
SR 2044 TO SR 2226
SHEET 2 OF 9 04/07/08



PROJECT REFERENCE NO. R-2814A	SHEET NO. 6
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
Buffer Drawing	
Sheet <u>6</u> of <u>9</u>	

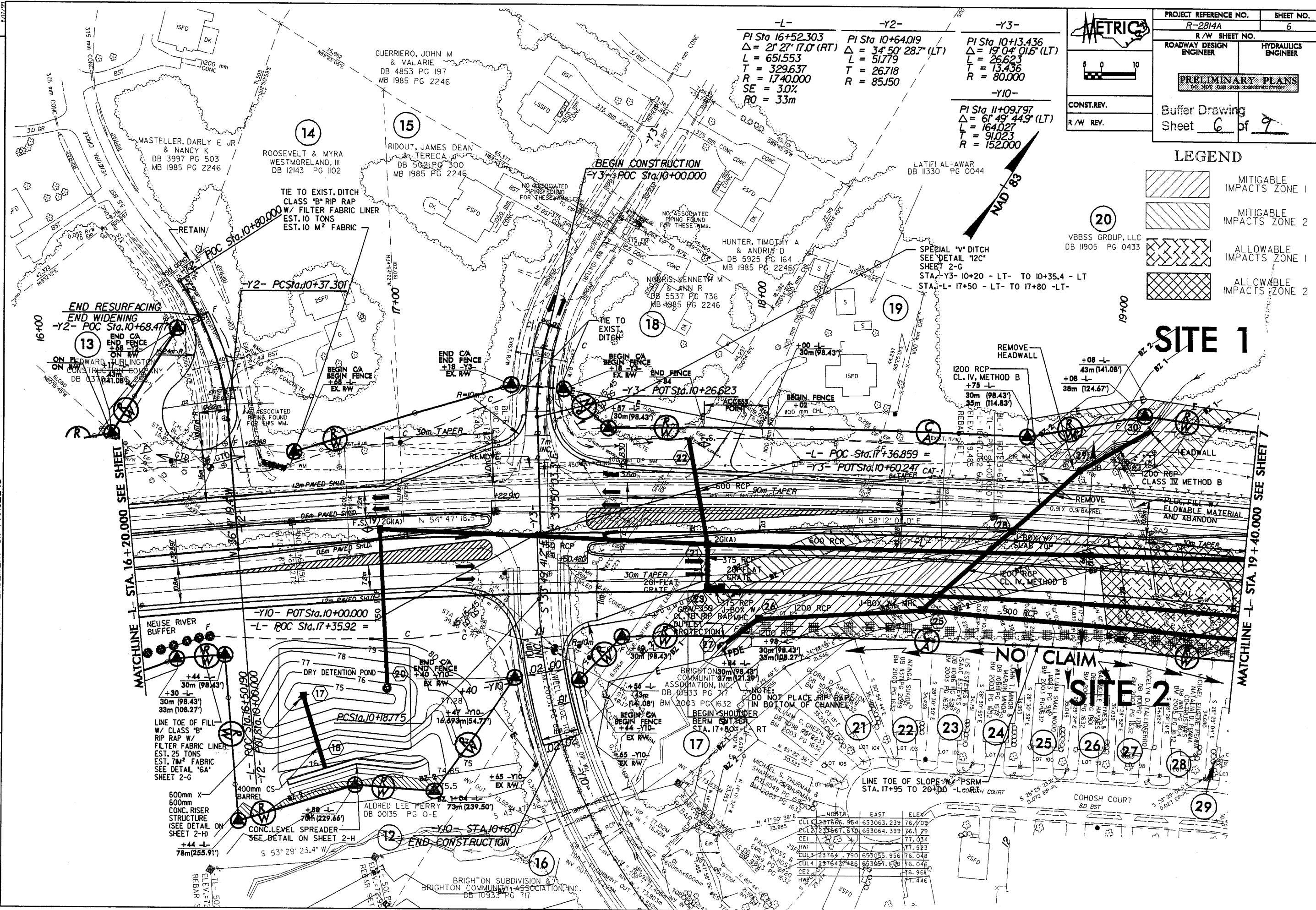
LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

SITE 1

SITE 2

-L- PI Sta 16+52.303 Δ = 2° 27' 17.0" (RT) L = 651.553 T = 329.637 R = 1740.000 SE = 3.0% RO = 33m	-Y2- PI Sta 10+64.019 Δ = 34° 50' 28.7" (LT) L = 51.779 T = 26.718 R = 85.150	-Y3- PI Sta 10+13.436 Δ = 19° 04' 01.6" (LT) L = 26.623 T = 13.436 R = 80.000
-Y10-		
PI Sta 11+09.797 Δ = 61° 49' 44.9" (LT) L = 164.027 T = 91.023 R = 152.000		

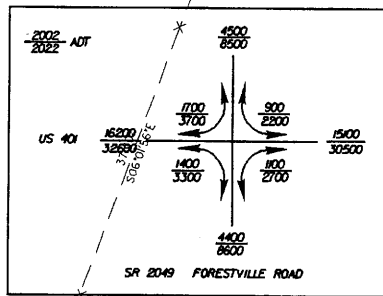


REVISIONS
 R/W REVISION - 09/13/07 -
 R/W REVISION - 05/09/08 -
 R/W REVISION - 06/10/08 - PER SUBMITTAL OF MARCH 19, 2008 - REVISED RIGHT OF WAY AND ELIMINATE PERMANENT CONSTRUCTION EASEMENT ON PARCEL 15
 24-NOV-2008 02:38
 2011.10.10 AT 11:53:55

MATCHLINE - STA. 16+20.000 SEE SHEET 5

MATCHLINE - STA. 19+40.000 SEE SHEET 7

LINE TOE OF SLOPE	EAST	ELEV
STA. 17+95 TO 20+00	653063.239	76.709
	653064.399	76.129
	653065.559	77.034
	653066.719	77.583
	653067.879	78.048
	653069.039	78.046
	653070.199	77.961
	653071.359	77.446



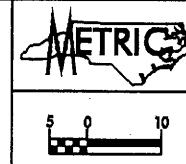
EDWARDS, DAVID G & PAMELA W
DB 4271 PG 660
MB 1983 PG 1518

38

-Y5- POT Sta. 11+57.578

-Y4-
PI Sta 11+55.673
 $\Delta = 45^\circ 21' 44.9''$ (LT)
L = 197.931
T = 104.481
R = 250.000

-Y5-
PI Sta 10+55.604
 $\Delta = 8^\circ 22' 59.4''$ (RT)
L = 65.841
T = 32.979
R = 450.000



PROJECT REFERENCE NO. R-2814A	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>NOT TO BE USED FOR CONSTRUCTION</small>	
Buffer Drawing Sheet <u>7</u> of <u>9</u>	

LEGEND

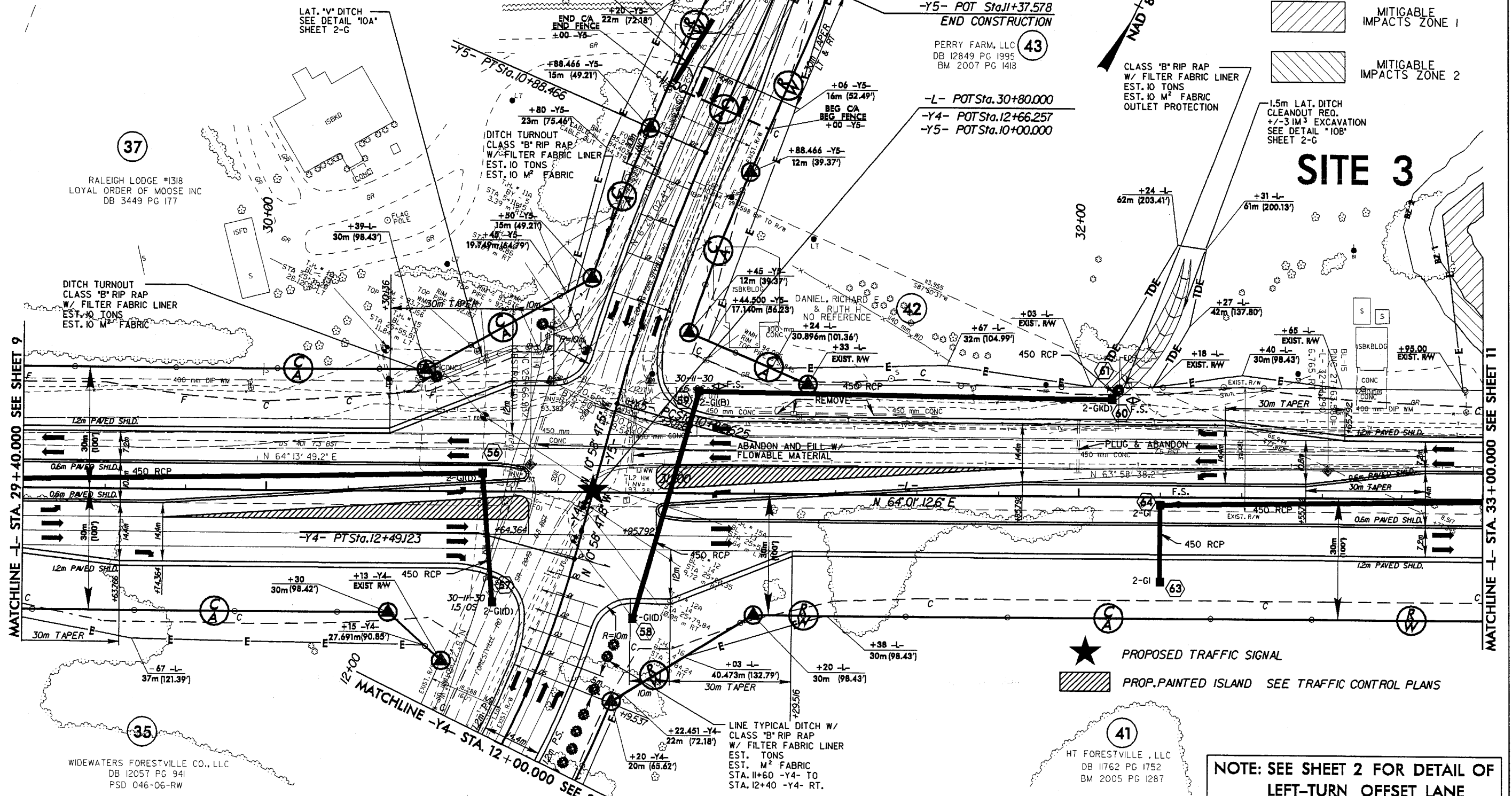
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

1.5m LAT. DITCH
CLEANOUT REQ.
+/- 3 IM³ EXCAVATION
SEE DETAIL "10B"
SHEET 2-G

SITE 3



CLASS 'B' RIP RAP
W/ FILTER FABRIC LINER
EST. 10 TONS
EST. 10 M² FABRIC
OUTLET PROTECTION



MATCHLINE -L- STA. 29+40.000 SEE SHEET 9

MATCHLINE -L- STA. 33+00.000 SEE SHEET 11

MATCHLINE -Y4- STA. 12+00.000 SEE SHEET 16

- PROPOSED TRAFFIC SIGNAL
- PROP. PAINTED ISLAND SEE TRAFFIC CONTROL PLANS

41
HT FORESTVILLE, LLC
DB 11762 PG 1752
BM 2005 PG 1287

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

**NOTE: SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 25 FOR -Y4- & -Y5- PROFILES**

REVISIONS
 R/W REVISION - 12/02/08 - ADDED TEMPORARY CONSTRUCTION EASEMENTS LEFT OF -L- ON PARCEL 43 DUE TO CONSTRUCTION REQUIREMENTS
 R/W REVISION - FEBRUARY 14, 2008 -
 R/W REVISION - 05/12/06 -
 01-065-2008 13x24
 24/11/08

WIDEWATERS FORESTVILLE CO., LLC
DB 12057 PG 941
PSD 046-06-RW

35

37

RALEIGH LODGE #1318
LOYAL ORDER OF MOOSE INC
DB 3449 PG 177

LAT. 'V' DITCH
SEE DETAIL "10A"
SHEET 2-G

DITCH TURNOUT
CLASS 'B' RIP RAP
W/ FILTER FABRIC LINER
EST. 10 TONS
EST. 10 M² FABRIC

DANIEL, RICHARD E
& RUTH H
NO REFERENCE

-L- POT Sta. 30+80.000
-Y4- POT Sta. 12+66.257
-Y5- POT Sta. 10+00.000

PERRY FARM, LLC
DB 12849 PG 1995
BM 2007 PG 1418

TIE TO EXIST.
DITCH

+37.578 -Y5-
15m (49.21)
EXIST. R/W

+37.578 -Y5-
12m (39.37)
EXIST. R/W

+88.466 -Y5-
15m (49.21)

+06 -Y5-
16m (52.49)
BEG. CA
BEG. FENCE
+00 -Y5-

+39 -L-
30m (98.43)

+80 -Y5-
23m (75.46)

+45 -Y5-
12m (39.37)

+44.500 -Y5-
17.140m (56.23')

+03 -L-
EXIST. R/W

+67 -L-
EXIST. R/W

+27 -L-
42m (137.80')

+65 -L-
EXIST. R/W

+40 -L-
30m (98.43)

+95.00
EXIST. R/W

+95.792

N. 64.01.126 E

N. 63.58.38.2 E

-Y4- PT Sta. 12+49.123

+30
30m (98.42')

+13 -Y4-
EXIST. R/W

30-11-30
15/05

+20 -Y4-
27.691m (90.85')

+03 -L-
40.473m (132.79')

+20 -L-
30m (98.43')

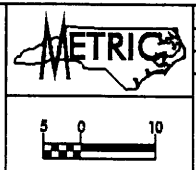
+38 -L-
30m (98.43')

+22.451 -Y4-
22m (72.18')

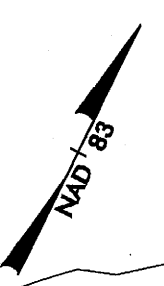
+20 -Y4-
20m (65.62')

LINE TYPICAL DITCH W/
CLASS 'B' RIP RAP
W/ FILTER FABRIC LINER
EST. 10 TONS
EST. 10 M² FABRIC
STA. 11+60 -Y4- TO
STA. 12+40 -Y4- RT.

PROJECT REFERENCE NO. R-2814A	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	
Buffer Drawing	Sheet 8 of 9



CONST. REV.
R/W REV.



43

PERRY FARM, LLC
DB 12849 PG 1995
BM 2007 PG 1418

SITE 4

SITE 3

SITE 3

SITE 4

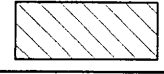
41

HT FORESTVILLE, LLC
DB 11762 PG 1752
BM 2005 PG 1287

LEGEND



MITIGABLE IMPACTS ZONE 1



MITIGABLE IMPACTS ZONE 2

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

REVISIONS
 R/W REVISION - 12/02/08 - ADDED TEMPORARY CONSTRUCTION EASEMENTS LEFT OF -L- ON PARCEL 43 DUE TO CONSTRUCTION REQUIREMENTS

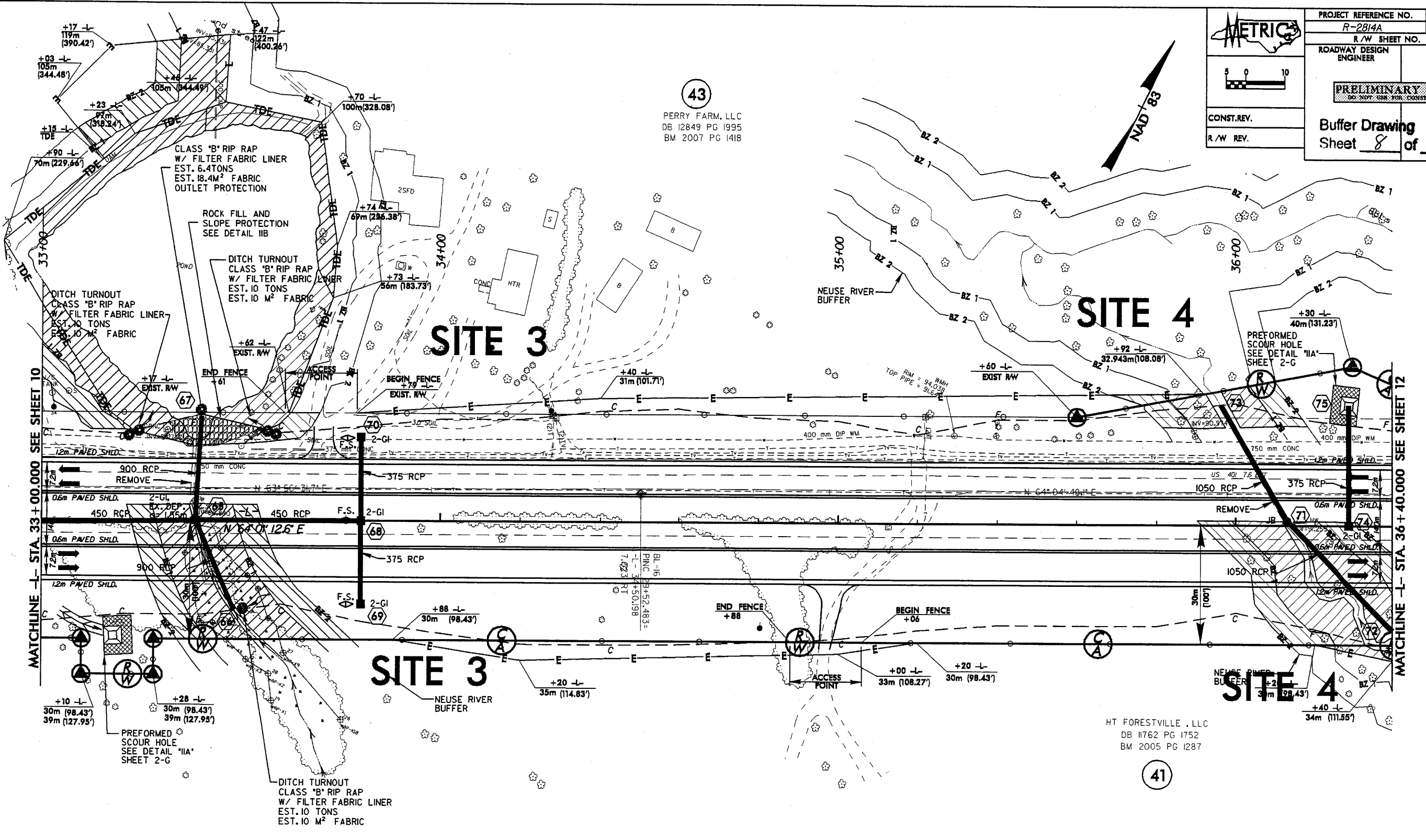
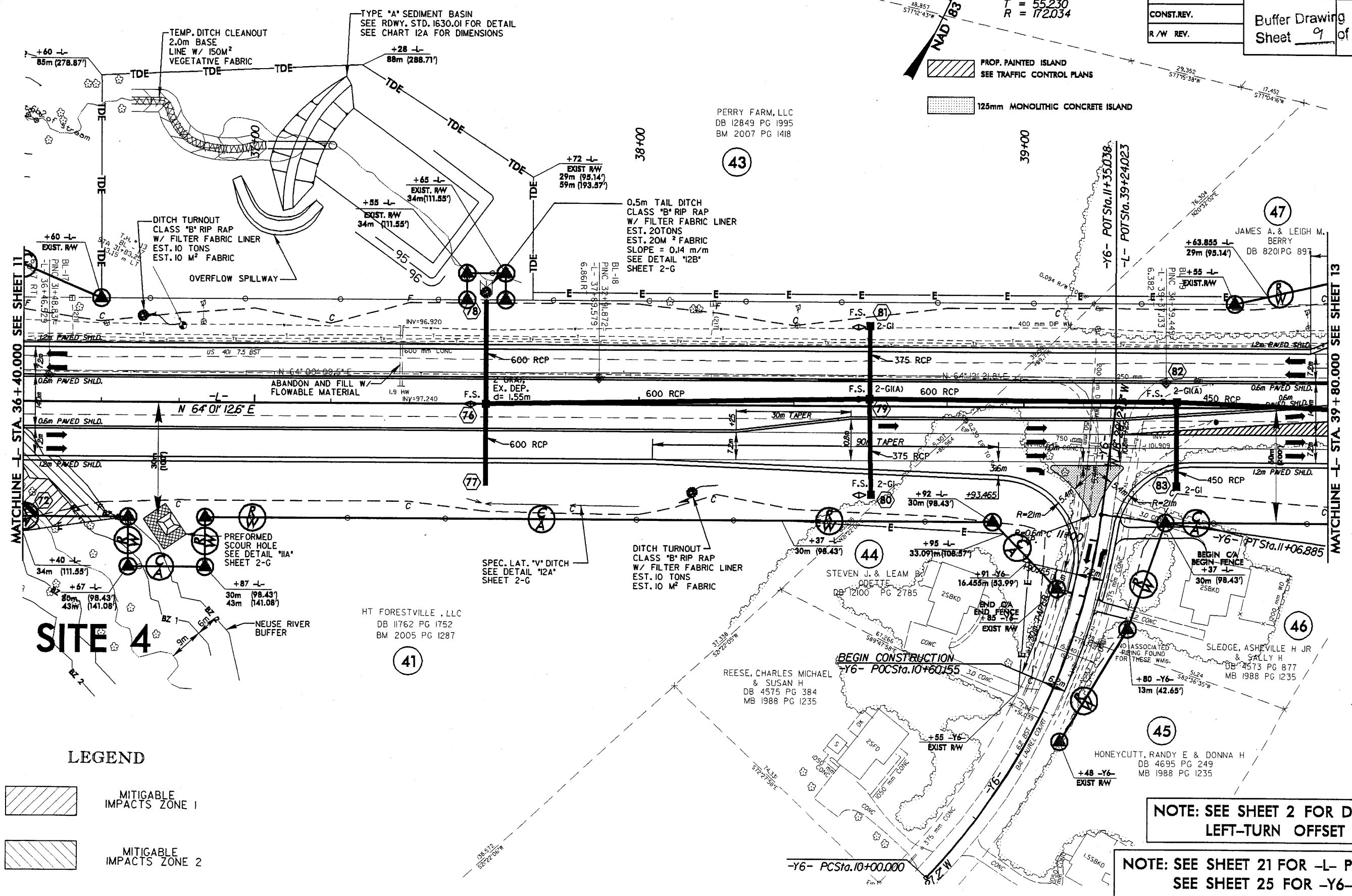


CHART I2A

BASIN APPROX. STA.	P	H	T	D*	E	F	B	X	Y	XI	YI	SURFACE AREA (m ²)	STORAGE VOLUME (m ³)
1	31+00	0.3	2.0	2.7	2.0	.46	2.4	2.1	0.6	1.8	0.6	880	482



LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

NOTE: SEE SHEET 2 FOR DETAIL OF LEFT-TURN OFFSET LANE

NOTE: SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 25 FOR -Y6- PROFILE

REVISIONS

24-NOV-2004 02:35
25-NOV-2004 10:15
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